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# *Capitalization Rate Study*

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*Lien Date 2010*

**California State Board of Equalization  
State-Assessed Properties Division  
2010 Capitalization Rate Study**

**Table of Contents**

Executive Summary .....	i
Summary Pages .....	1
Gas, Electric and Water Industry Worksheets .....	7
Gas Transmission Industry Worksheets .....	40
Electric Generation Facilities Worksheets .....	51
Telecommunications Industry Worksheets .....	62
Pipeline Industry Worksheets .....	78
Railroad Industry Worksheets .....	89

# Executive Summary

“The income approach to value includes any method of converting an income stream into a present value estimate (i.e., an indicator of current fair market value). The income approach is also called the capitalization approach because capitalization is the process of converting an expected income into an indicator of value.

The methods or techniques used in the income approach may be relatively simple (e.g., income or rent multipliers and direct capitalization), or more complex (e.g., various yield capitalization techniques). All of these methods are referred to as capitalization techniques because they convert an expected future income stream into a present value estimate.

The income approach requires careful application because small variations in its key variables (capitalization rate, duration of income stream, estimated income and expenses, etc.) will be mathematically leveraged into a wide range of estimated value. This is particularly true for the capitalization rate variable. The accuracy of the income approach is no greater than the validity of the assumptions used to estimate the key variables. The mathematical techniques used in the approach, while sometimes complicated, are merely tools for converting these assumptions into an estimate of current market value.”<sup>1</sup>

## ***I. Authority for Capitalization Rate Study***

Property Tax Rule 8 (g) (2) provides the authority for the method in which the capitalization rates were developed in this study. The rule states “the capitalization rate may be developed...

By deriving a weighted average of the capitalization rates for debt and for equity capital appropriate to the California money markets (the band-of-investment method) and adding increments for expenses that are excluded from outgo because they are based on the value that is being sought or the income that is being capitalized. The appraiser shall weight the rates for debt and equity capital by the respective amounts of such capital he deems most likely to be employed by prospective purchasers.”

## ***II. Band of Investment Approach***

In its simplest form, the band of investment method assumes that a purchaser would pay cash (or equity) for a portion of the property and would borrow the balance of the purchase price. For example:

Debt	30%	x	Cost of Debt	7%	=	2.1%
Equity	70%	x	Cost of Equity	12%	=	8.4%
Weighted Average Cost of Capital						<u>10.5%</u>

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<sup>1</sup> Assessors’ Handbook 501, Basic Appraisal, Revised January 2002

# Executive Summary

This booklet contains a study for each of the major state assessee industry groups<sup>2</sup> in California. Industry data was compiled by groups with similar Value Line financial ratings. Local exchange, wireless and interexchange industries have been combined into one telecommunications study.

Generally accepted procedures were used to estimate the cost of capital for debt and equity. The long term debt cost is the cost for a particular risk class of debt on the lien date. The equity rate reflects the rate of return or compensation that will satisfy the risk that a prospective purchaser would assume by investing in the property. The rates chosen are the result of analysis of economic conditions and financial data listed in the supporting schedules and are the product of the staff's informed judgment.

The rates derived in this study are basic capitalization (or discount) rates that represent the after-tax return on investment only. Any increments required to be added by Property Tax Rule 8(g)(2), such as income or ad valorem tax components, are in addition to the rates listed.

## A. *Capital Structure - Prospective Purchaser vs. Company Specific*

State assessees often ask why the Board does not use the current capital structure of individual companies in the band-of-investment method. As explained in Rule 8 (g)(2), the appraiser shall weight the rates of debt and equity capital by the respective amounts of such capital deemed most likely to be employed by a prospective purchaser.

Therefore, the capital structure contemplated is a representative or typical structure of an industry group of companies with a similar bond rating, not that of the present owner. The objective of doing so is to strike an optimum capital structure from the perspective of a potential investor.

## B. *Company Specific Debt Rates*

In many cases the debt component of the capital structure for a prospective purchaser and the individual company being assessed may be similar. In cases where, in the judgement of staff, the debt ratings of the individual companies being assessed and the debt ratings of prospective purchasers are similar, the company-specific bond rating has been used to develop the appropriate debt component of the recommended capitalization rate.

## C. *Impact of Holding Companies on Determination of Capital Structure*

Many of the larger state assessees are subsidiaries of their holding company. Stock purchases related to a subsidiary must be made through the parent holding company. Since there is no direct market data for state assessees that are subsidiaries of a holding company, staff must rely, in great part, upon market data related to the holding company.

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<sup>2</sup> Gas, Electric & Water; Natural Gas Transmission; Electric Generation; Telecommunications (Local Exchange, Interexchange, Wireless); Pipeline; Railroad

# Executive Summary

## ***III. Capital Asset Pricing Model***

The Capital Asset Pricing Model (CAPM) is a widely accepted theory used to estimate the cost of equity capital. In the application of CAPM, the most sensitive component affecting the outcome is the estimate of the beta<sup>3</sup> coefficient. The choice of different time frames and frequencies of measurement in the calculation of the beta can produce significantly different results. Another factor in the use of beta is the choice of whether to use an unadjusted beta or a beta adjusted to reflect the fact that betas tend to revert to the mean over time. In this study, three betas were obtained from separate sources: one adjusted (Value Line) and two unadjusted. Generally the betas from the three sources are averaged to establish the beta used to estimate the cost of equity capital for a specific industry. However, the average beta for highly regulated industries, such as gas or electric transmission and distribution, tend to understate the risk inherent in those securities. Accordingly, for companies in highly regulated environments, the Value Line adjusted beta was chosen as a better estimate of the relative risk in the calculation of the required equity return.

## ***IV. Flotation Costs***

When new issues of both debt and equity capital are sold to investors, the issuing company incurs transaction costs such as underwriting fees, legal expenses, and prospectus preparation costs. These costs of issuing securities are known as flotation costs. Much like loan fees or points on a mortgage, flotation costs effectively reduce the net proceeds that a firm will receive from issuing securities. The cost of capital is adjusted upward to reflect the expected flotation costs incurred to issue securities. Since the flotation costs are reflected in the weighted average cost of capital, the flotation costs should not be allowed as expenses in projecting cash flows to be capitalized. Each basic capitalization rate in this study has been adjusted to reflect flotation costs.

## ***V. Utilization of Other Studies and Data***

Staff appraisers considered data and capitalization rate studies submitted by assesses and interested parties and, where appropriate, utilized them in the development of the staff derived rates.

The capitalization rates published in this study are intended to be applied to the unitary operations of the companies subject to assessment by the California State Board of Equalization.

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<sup>3</sup> The covariance of the returns of a security regressed against the returns of the overall market - a measurement of relative volatility

**California State Board of Equalization  
State-Assessed Properties Division  
2010 Capitalization Rate Study  
Gas, Electric and Water Companies**

SBE No.	Company Name	Ratings			Capital Structure			Rates of Return			Basic Cap Rate
		Financial	Preferred Stock	Bond	Common Equity	Preferred Stock	Debt	Common Equity	Preferred Stock	Debt	
Gas and Electric Companies											
141	San Diego Gas & Electric Company	A	Baa1	Aa3	53%	2%	45%	11.62%	6.62%	5.95%	8.97%
148	Southern California Edison Company	B++	Baa2	A1	52%	1%	47%	12.04%	6.85%	6.06%	9.18%
135	Pacific Gas and Electric Company	B++	Baa3	A3	52%	1%	47%	11.88%	7.08%	6.32%	9.22%
146	Sierra Pacific Power Company	B	B2	Baa3	52%	1%	47%	12.57%	8.23%	6.78%	9.80%
106	PacifiCorp	Not Rated	Baa3	A2	52%	1%	47%	13.09%	7.08%	6.16%	9.77%
191	Arizona Public Service Company	Not Rated		Baa2	51%		49%	13.09%		6.62%	9.92%
103	Anza Electric Cooperative, Inc.	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
119	Trans Bay Cable LLC	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
156	Atlantic Path 15, LLC	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
160	Valley Electric Association, Inc.	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
173	Surprise Valley Electrification Corp.	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
176	Plumas-Sierra Rural Electric Coop.	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
185	Mountain Utilities, LLC	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
193	Southwest Transmission Coop., Inc.	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
Natural Gas Distribution and Storage Companies											
149	Southern California Gas Company	A	Baa1	Aa3	53%	2%	45%	11.33%	6.62%	5.95%	8.81%
152	Southwest Gas Corporation	B	Ba1	Not Rated	52%	1%	47%	10.99%	7.31%	6.78%	8.97%
192	Alpine Natural Gas Operating	Not Rated		Not Rated	51%		49%	12.83%		6.78%	9.86%
194	West Coast Gas Company, Inc.	Not Rated		Not Rated	51%		49%	12.83%		6.78%	9.86%
195	Wild Goose Storage, LLC	Not Rated		Not Rated	70%		30%	13.35%		6.78%	11.38%
198	Lodi Gas Storage, LLC	Not Rated		Not Rated	70%		30%	13.35%		6.78%	11.38%
Water Company											
101	Golden State Water Company	B++		Not Rated	55%		45%	10.68%		7.49%	9.24%

**California State Board of Equalization  
State-Assessed Properties Division  
2010 Capitalization Rate Study  
Natural Gas Transmission Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
153	Transwestern Pipeline Company	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
180	North Baja Pipeline, LLC	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
187	Mojave Pipeline Company	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
188	Kern River Gas Transmission Company	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
189	Standard Pacific Gas Line Incorporated	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
190	Tuscarora Gas Transmission Company	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
196	Questar Southern Trails Pipeline Company	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
197	El Paso Natural Gas Company	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%

**California State Board of Equalization  
State-Assessed Properties Division  
2010 Capitalization Rate Study  
Electric Generation Facilities**

Facility Type	Ratings		Capital Structure		Rates of Return		Basic Cap Rate <sup>3</sup>
	Value Line Financial	Moody's Bond	Common Equity	Debt	Common Equity	Debt	
<b>Modern Electric Generation Technology <sup>1</sup></b>	C++	B2	55%	45%	14.66%	8.44%	<b>11.86%</b>
<b>Older Electric Generation Technology <sup>2</sup></b>	C++	B2	55%	45%	16.75%	9.46%	<b>13.47%</b>

<sup>1</sup> Modern Electric Generation Technology - Generally high efficiency combined-cycle or simple cycle gas turbine electric generation facilities incorporating contemporary generation technologies.

<sup>2</sup> Older Electric Generation Technology - Generally older steam turbine electric generation facilities that were sold off by vertically integrated electric utilities and for which no replacements, other than for routine maintenance have been made.

<sup>3</sup> Staff may adjust the rates stated above if the specific situation of a facility warrants an adjustment to its basic capitalization rate.



**California State Board of Equalization  
State-Assessed Properties Division  
2010 Capitalization Rate Study  
Telecommunications Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
Local Exchange Companies								
279	Pacific Bell Telephone Company	A+	A2	70%	30%	12.57%	5.96%	10.58%
201	Verizon California, Inc.	A+	A3	70%	30%	12.57%	6.11%	10.63%
284	Citizens Telecommunications Co. of California, Inc.	B	Not Rated	65%	35%	12.83%	6.57%	10.64%
294	SureWest Telephone	C++	Not Rated	65%	35%	12.83%	6.57%	10.64%
	Other Local Exchange Companies	Not Rated	Not Rated	65%	35%	13.87%	6.72%	11.37%
Wireless Companies								
2606	AT&T Mobility LLC	A+	A2	70%	30%	12.04%	5.96%	10.22%
2532	Los Angeles SMSA Ltd., Partnership	A+	A3	70%	30%	12.04%	6.11%	10.26%
2552	Fresno MSA Limited Partnership	A+	A3	70%	30%	12.04%	6.11%	10.26%
2559	Cellco Partnership	A+	A3	70%	30%	12.04%	6.11%	10.26%
2748	OmniPoint Communications Inc.	B+	Not Rated	65%	35%	14.66%	6.72%	11.88%
2720	Sprint Telephony PCS, L.P.	C++	Not Rated	65%	35%	14.66%	7.03%	11.99%
2733	MetroPCS California, LLC	C++	Not Rated	65%	35%	14.66%	7.03%	11.99%
	Other Wireless Companies <sup>1</sup>	Not Rated	Not Rated	55%	45%	16.75%	8.50%	13.04%
	Wireless Reseller Companies	Not Rated	Not Rated	55%	45%	18.85%	9.01%	14.42%
Interexchange Companies								
2310	AT&T Communications, Inc.	A+	A2	70%	30%	13.35%	5.96%	11.13%
7885	AT&T Advanced Solutions	A+	A2	70%	30%	13.35%	5.96%	11.13%
2274	MCI Communications Services, Inc.	A+	A3	70%	30%	13.35%	6.11%	11.18%
2372	MCI Metro Access Transmission Services, LLC	A+	A3	70%	30%	13.35%	6.11%	11.18%
7522	tw telecom of california l.p.	B	Not Rated	65%	35%	14.14%	6.72%	11.54%
7761	Level 3 Communications, LLC	C++	Not Rated	60%	40%	16.23%	6.72%	12.43%
2014	Sprint Communications Co., L.P.	C++	Not Rated	60%	40%	16.23%	7.03%	12.55%
2463	Qwest Communications Corporation	C+	Not Rated	60%	40%	16.23%	7.03%	12.55%
	Other Interexchange Carriers	Not Rated	Not Rated	55%	45%	20.42%	8.50%	15.06%
	Other Interexchange Resellers	Not Rated	Not Rated	55%	45%	23.56%	9.01%	17.01%

<sup>1</sup> Includes Radio Telephone and Paging Companies

**California State Board of Equalization  
State-Assessed Properties Division  
2010 Capitalization Rate Study  
Pipeline Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Equity	Debt	
<b>402</b>	<b>CALNEV Pipe Line LLC</b>	NR-1	NR-b	65%	35%	13.09%	6.50%	10.78%
<b>461</b>	<b>SFPP, L.P.</b>	NR-1	NR-b	65%	35%	13.09%	6.50%	10.78%
<b>468</b>	<b>Shell California Pipeline Company LLC</b>	NR-2	NR-b	65%	35%	13.61%	6.50%	11.12%
<b>479</b>	<b>Chevron Pipeline Company</b>	NR-2	NR-b	65%	35%	13.61%	6.50%	11.12%
<b>480</b>	<b>ConocoPhillips Pipe Line Company</b>	NR-2	NR-b	65%	35%	13.61%	6.50%	11.12%
<b>486</b>	<b>Pacific Pipeline System, LLC</b>	NR-2	NR-b	65%	35%	13.61%	6.50%	11.12%
	<b>Other Pipeline Companies</b>	NR-3	NR-c	65%	35%	14.66%	7.52%	12.16%

**California State Board of Equalization  
State-Assessed Properties Division  
2010 Capitalization Rate Study  
Railroads**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
<b>804</b>	<b>BNSF Railway Company</b>	A	Baa2	75%	25%	13.61%	6.50%	<b>11.83%</b>
<b>843</b>	<b>Union Pacific Railroad Company</b>	A	Baa2	75%	25%	13.61%	6.50%	<b>11.83%</b>
<b>802</b>	<b>Central Oregon &amp; Pacific Railroad</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>810</b>	<b>California Northern Railroad</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>813</b>	<b>Pacific Harbor Lines</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>850</b>	<b>Modesto &amp; Empire Traction Company</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>865</b>	<b>San Diego &amp; Imperial Valley Railroad Co. Inc.</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>882</b>	<b>Trona Railway Co.</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>897</b>	<b>San Joaquin Valley Railroad Company</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>899</b>	<b>Arizona &amp; California Railroad</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
	<b>Other Railroad Companies</b>	NR-2	NR-2	60%	40%	15.97%	9.04%	<b>13.20%</b>

**California State Board of Equalization  
State-Assessed Properties Division  
2010 Capitalization Rate Study  
Gas, Electric and Water Companies**

SBE No.	Company Name	Ratings			Capital Structure			Rates of Return			Basic Cap Rate
		Financial	Preferred Stock	Bond	Common Equity	Preferred Stock	Debt	Common Equity	Preferred Stock	Debt	
Gas and Electric Companies											
141	San Diego Gas & Electric Company	A	Baa1	Aa3	53%	2%	45%	11.62%	6.62%	5.95%	8.97%
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135	Pacific Gas and Electric Company	B++	Baa3	A3	52%	1%	47%	11.88%	7.08%	6.32%	9.22%
146	Sierra Pacific Power Company	B	B2	Baa3	52%	1%	47%	12.57%	8.23%	6.78%	9.80%
106	PacifiCorp	Not Rated	Baa3	A2	52%	1%	47%	13.09%	7.08%	6.16%	9.77%
191	Arizona Public Service Company	Not Rated		Baa2	51%		49%	13.09%		6.62%	9.92%
103	Anza Electric Cooperative, Inc.	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
119	Trans Bay Cable LLC	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
156	Atlantic Path 15, LLC	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
160	Valley Electric Association, Inc.	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
173	Surprise Valley Electrification Corp.	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
176	Plumas-Sierra Rural Electric Coop.	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
185	Mountain Utilities, LLC	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
193	Southwest Transmission Coop., Inc.	Not Rated		Not Rated	51%		49%	13.09%		6.78%	10.00%
Natural Gas Distribution and Storage Companies											
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152	Southwest Gas Corporation	B	Ba1	Not Rated	52%	1%	47%	10.99%	7.31%	6.78%	8.97%
192	Alpine Natural Gas Operating	Not Rated		Not Rated	51%		49%	12.83%		6.78%	9.86%
194	West Coast Gas Company, Inc.	Not Rated		Not Rated	51%		49%	12.83%		6.78%	9.86%
195	Wild Goose Storage, LLC	Not Rated		Not Rated	70%		30%	13.35%		6.78%	11.38%
198	Lodi Gas Storage, LLC	Not Rated		Not Rated	70%		30%	13.35%		6.78%	11.38%
Water Company											
101	Golden State Water Company	B++		Not Rated	55%		45%	10.68%		7.49%	9.24%

**2010 Capitalization Rate Study  
Gas, Electric and Water Companies  
Industry Notes**

- For rate based utilities, staff considered the California Public Utilities Commission (CPUC) decisions that established the capital structures. For nonrated utilities, capital structures were developed based on the results of sample companies and staff judgement considering the relative risk of the subject utilities. Staff also reviewed submissions by San Diego Gas & Electric Company, Southern California Edison Company, Pacific Gas and Electric Company, Southern California Gas Company, Southwest Gas Corporation and Lodi Gas Storage, LLC.
- For rate based and non-rate based utilities, staff relied upon the results of the following methodologies in the development of equity rates:
  1. CPUC decisions that established rates of returns for rate based utilities
  2. Discounted Cash Flow
  3. Capital Asset Pricing Model – Staff considered both the ex post and ex ante risk premiums
- For rate based and non-rate based utilities, staff considered the following in the development of debt rates:
  1. CPUC decisions that established debt rates for rate based utilities
  2. Moody's Utility Bond Yield Spreads
  3. For nonrated companies, staff used bond ratings of Baa3 and B3 for natural gas distribution and water, respectively
- The following companies were added to the 2010 Capitalization Rate Study sample for gas and electric companies:
  1. Alliant Energy Corp.
  2. Black Hills Corp.
  3. NV Energy, Inc.
  4. PNM Resources, Inc.
  5. Pinnacle West Capital
  6. Progress Energy, Inc.
  7. UIL Holdings Corp.
- The following company was deleted from the 2010 Capitalization Rate Study sample for natural gas distribution companies:
  1. Southern Union Company

**2010 Capitalization Rate Study  
Gas and Electric Companies  
Flotation Cost Adjustment**

<b>Equity</b>				<b>Preferred Stock</b>				<b>Debt</b>			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A	11.10%	4.50%	11.62%	Baa1	6.50%	1.70%	6.62%	Aa3	5.85%	1.70%	5.95%
B++	11.35%	4.50%	11.88%	Baa2	6.73%	1.70%	6.85%	A1	5.95%	1.70%	6.06%
	11.50%	4.50%	12.04%	Baa3	6.96%	1.70%	7.08%	A2	6.06%	1.70%	6.16%
B+, B	12.00%	4.50%	12.57%	Ba1	7.18%	1.70%	7.31%	A3	6.21%	1.70%	6.32%
NR	12.50%	4.50%	13.09%	Ba2	7.41%	1.70%	7.54%	Baa1	6.36%	1.70%	6.47%
				Ba3	7.64%	1.70%	7.77%	Baa2	6.51%	1.70%	6.62%
				B1	7.86%	1.70%	8.00%	Baa3	6.66%	1.70%	6.78%
				B2	8.09%	1.70%	8.23%	Ba1	6.81%	1.70%	6.93%
				B3	8.32%	1.70%	8.46%	Ba2	6.96%	1.70%	7.08%
				Caa1	8.54%	1.70%	8.69%	Ba3	7.11%	1.70%	7.23%
				Caa3	8.77%	1.70%	8.92%	B1	7.26%	1.70%	7.39%
								B2	7.41%	1.70%	7.54%
								B3	7.56%	1.70%	7.69%
								NR	7.71%	1.70%	7.84%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

**2010 Capitalization Rate Study  
Gas and Electric Companies  
Summary of Rates of Return**

Common Equity		Preferred Stock			Bonds		
Value Line Rating	Rate of Return <sup>1</sup>	Moody's P/S Yields	Moody's Rating	Rate of Return <sup>2</sup>	Moody's Bond Yields	Moody's Rating	Rate of Return <sup>2</sup>
A	11.10%	Aa=N/A	Aa1	5.71%	Aaa=N/A	Aaa2	5.16%
			Aa2	5.80%		Aaa3	5.28%
B++	11.35%		Aa3	5.82%		Aa1	5.41%
	11.50%	A=6.05%	A1	5.94%	Aa=5.54	Aa2	5.54%
			A2	6.05%		Aa3	5.65%
B+, B	12.00%		A3	6.28%		A1	5.75%
		Baa=6.73%	Baa1	6.50%	A=5.86	A2	5.86%
NR <sup>3</sup>	12.50%		Baa2	6.73%		A3	6.01%
			Baa3	6.96%		Baa1	6.16%
			Ba1	7.18%	Baa=6.31	Baa2	6.31%
			Ba2	7.41%		Baa3	6.46%
			Ba3	7.64%		Ba1	6.61%
			B1	7.86%		Ba2	6.76%
			B2	8.09%		Ba3	6.91%
			B3	8.32%		B1	7.06%
			Caa1	8.54%		B2	7.21%
			Caa3	8.77%		B3	7.36%
						NR	7.51%

<sup>1</sup> The Rate of Return on Common Equity was developed by staff based on the relative risk of the utilities in conjunction with the results of the various financial models and pertinent information from various sources. Consideration was given to the recent California Public Utilities Commission (CPUC) decisions that established rates of return. For 2010, the return on equity (ROE) and return on rate base (ROR) for PG&E are 11.35% and 8.79%, respectively (D.09-10-016); for SCE, the ROE and ROR are 11.50% and 8.82%, respectively (D.09-10-016); for SDG&E, the ROE and ROR are 11.10% and 8.40%, respectively (D.07-12-049).

<sup>2</sup> The Rates of Return on Preferred Stocks and Bonds were based on the 2009 Moody's "Utility Preferred Stock Yields" and "Utility Bond Yields" reports. Because Moody assigns yields only to groups Aaa, Aa, A and Baa for bonds; and Aa, A, and Baa for preferred stock, staff interpolates the difference between these groups to further refine the ratings.

<sup>3</sup> For companies that do not have financial ratings (NR), staff judgment is used in assigning the Rate of Return on Common Equity based on the financial information collected from various sources.

**2010 Capitalization Rate Study**  
**Gas and Electric Companies**  
**Capital Asset Pricing Model - Ex Ante**

Component	Value Line Ratings	
	A++, A+	B++, B+, B
Expected Future Return, S&P 500	8.47%	8.47%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	4.60%	4.60%
Risk Premium	3.87%	3.87%
Beta <sup>2</sup>	0.81	0.71
Adjusted Risk Premium	3.12%	2.74%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	4.60%	4.60%
<b>Projected Return on Common Equity</b>	<b>7.72%</b>	<b>7.34%</b>

<sup>1</sup> WSJ.com, January 4, 2010

<sup>2</sup> The estimated betas were derived from a sample of gas and electric companies with similar ratings.



**2010 Capitalization Rate Study**  
**Gas and Electric Companies**  
**Capital Asset Pricing Model - Ex Post**

Component	Value Line Ratings	
	A++, A+	B++, B+, B
Common Stock Return (1926 - 2009) <sup>1</sup>	11.80%	11.80%
Less: Income-Long Term Government Bonds (1926-2009) <sup>1</sup>	5.20%	5.20%
Risk Premium	6.60%	6.60%
Beta <sup>2</sup>	0.81	0.71
Adjusted Risk Premium	5.32%	4.67%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>3</sup>	4.60%	4.60%
<b>Projected Return on Common Equity</b>	<b>9.92%</b>	<b>9.27%</b>

<sup>1</sup> Ibbotson Associates Study, 2010

<sup>2</sup> The estimated betas were derived from a sample of gas and electric companies with similar ratings.

<sup>3</sup> WSJ.com, January 4, 2010

**2010 Capitalization Rate Study**  
**Gas and Electric Companies**  
**Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/09	Est. 2010 Earnings	2009 Earnings	2009 Dividends	Est. 2010 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
A+	Consolidated Edison	45.43	3.30	3.15	2.36	2.38	5.24%	1.00%	3.33%	7.26%	6.24%	8.57%
A+	Exelon Corporation	48.87	3.80	4.30	2.10	2.10	4.30%	4.50%	2.90%	7.78%	8.80%	7.20%
A+	FPL Group Inc.	52.82	4.45	3.90	1.89	2.00	3.79%	6.00%	7.70%	8.42%	9.79%	11.49%
A	Allete, Inc.	32.68	2.20	1.90	1.76	1.78	5.45%	3.00%	2.33%	6.73%	8.45%	7.78%
A	Alliant Energy Corp.	30.26	2.25	1.85	1.50	1.60	5.29%	7.00%	3.77%	7.44%	12.29%	9.05%
A	CH Energy Group	42.52	2.65	2.25	2.16	2.16	5.08%	NIL	3.50%	6.23%	5.08%	8.58%
A	MGE Energy Inc.	35.74	2.40	2.15	1.46	1.49	4.17%	0.50%	5.33%	6.72%	4.67%	9.50%
A	NStar	36.80	2.55	2.35	1.53	1.63	4.43%	5.50%	6.53%	6.93%	9.93%	10.96%
A	OGE Energy Corp.	36.89	2.80	2.50	1.43	1.46	3.96%	2.50%	5.33%	7.59%	6.46%	9.29%
A	Otter Tail Corporation	24.82	1.20	0.80	1.19	1.19	4.79%	2.00%	3.13%	4.83%	6.79%	7.93%
A	Scana Corp.	37.68	3.00	2.95	1.88	1.92	5.10%	3.00%	4.97%	7.96%	8.10%	10.06%
A	Sempra Energy	55.98	5.10	4.80	1.56	1.72	3.07%	8.50%	6.50%	9.11%	11.57%	9.57%
A	Southern Co.	33.32	2.40	2.30	1.73	1.80	5.40%	4.00%	5.53%	7.20%	9.40%	10.94%
A	Vectren Corp.	24.68	1.85	1.60	1.35	1.37	5.55%	3.00%	6.27%	7.50%	8.55%	11.82%
	Mean						4.69%	3.88%	4.80%	7.26%	8.29%	9.48%
	Median						4.94%	3.00%	5.15%	7.35%	8.50%	9.40%
	Weighted Average										9.09%	9.66%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from CNNMoney.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study**  
**Gas and Electric Companies**  
**Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/09	Est. 2010 Earnings	2009 Earnings	2009 Dividends	Est. 2010 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B++	Allegheny Energy Corp.	23.48	2.35	2.25	0.60	0.80	3.41%	30.00%	12.33%	10.01%	33.41%	15.74%
B++	Ameren Corp.	27.95	2.55	2.75	1.54	1.54	5.51%	-6.50%	2.67%	9.12%	-0.99%	8.18%
B++	American Electric Power	34.79	3.00	2.95	1.64	1.66	4.77%	3.00%	3.10%	8.62%	7.77%	7.87%
B++	DPL Inc.	27.60	2.45	2.20	1.14	1.18	4.28%	3.50%	7.43%	8.88%	7.78%	11.71%
B++	Edison International	34.78	3.25	3.10	1.25	1.28	3.68%	4.00%	3.17%	9.34%	7.68%	6.85%
B++	El Paso Electric	20.28	1.70	1.55	NIL	NIL	0.00%	NMF	6.50%	8.38%	0.00%	6.50%
B++	PG&E Corporation	44.65	3.40	3.15	1.68	1.80	4.03%	7.50%	7.17%	7.61%	11.53%	11.20%
B++	Portland General Electric	20.41	1.65	1.40	1.01	1.05	5.14%	5.50%	5.67%	8.08%	10.64%	10.81%
B++	Progress Energy, Inc.	41.01	3.15	3.05	2.48	2.50	6.10%	1.00%	5.00%	7.68%	7.10%	11.10%
B++	UIL Holdings Corp.	28.08	2.00	1.90	1.73	1.73	6.16%	NIL	4.00%	7.12%	6.16%	10.16%
B++	Westar Energy	21.72	1.70	1.40	1.20	1.24	5.71%	4.50%	4.23%	7.83%	10.21%	9.94%
B++	Wisconsin Energy Corp.	49.83	3.70	3.10	1.35	1.55	3.11%	13.50%	8.87%	7.43%	16.61%	11.98%
B++	Xcel Energy	21.22	1.60	1.49	0.97	1.00	4.71%	3.00%	6.50%	7.54%	7.71%	11.21%
B+	Avista Corporation	21.59	1.60	1.55	0.81	0.96	4.45%	11.50%	5.50%	7.41%	15.95%	9.95%
B+	Black Hills Corp.	26.63	2.05	1.80	1.42	1.44	5.41%	2.50%	6.83%	7.70%	7.91%	12.24%
B+	Cleco Corporation	27.33	2.00	1.70	0.90	1.00	3.66%	10.00%	9.17%	7.32%	13.66%	12.83%
B+	DTE Energy Co.	43.59	3.50	3.25	2.12	2.12	4.86%	3.00%	5.33%	8.03%	7.86%	10.20%
B+	Empire District Electric Co.	18.73	1.40	1.20	1.28	1.28	6.83%	1.00%	6.00%	7.47%	7.83%	12.83%
B+	Great Plains Energy Inc.	19.39	1.40	1.10	0.83	0.83	4.28%	-6.50%	3.50%	7.22%	-2.22%	7.78%
B+	Hawaiian Electric Industries	20.90	1.50	0.90	1.24	1.24	5.93%	NIL	9.60%	7.18%	5.93%	15.53%
B+	Northeast Utilities	25.79	1.90	1.85	0.95	1.00	3.88%	7.00%	8.73%	7.37%	10.88%	12.61%
B+	Pinnacle West Capital	36.05	2.80	2.45	2.10	2.10	5.83%	1.00%	5.67%	7.77%	6.83%	11.49%
B	Centerpoint Energy, Inc.	14.51	1.10	1.00	0.76	0.78	5.38%	5.00%	3.00%	7.58%	10.38%	8.38%
B	Central Vermont PS	20.80	1.65	1.60	0.92	0.92	4.42%	1.00%	3.00%	7.93%	5.42%	7.42%
B	CMS Energy Corp.	15.66	1.35	1.15	0.50	0.60	3.83%	27.50%	7.13%	8.62%	31.33%	10.96%
B	NV Energy, Inc.	12.38	1.15	0.85	0.41	0.45	3.63%	NMF	8.67%	9.29%	3.63%	12.30%
B	PNM Resources, Inc.	12.52	0.65	0.85	0.50	0.50	3.99%	NMF	6.70%	5.19%	3.99%	10.69%
	Mean						4.56%	6.00%	6.13%	7.92%	9.44%	10.68%
	Median						4.45%	3.75%	6.00%	7.70%	7.78%	10.96%
	Weighted Average										9.92%	10.20%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from CNNMoney.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study  
Gas and Electric Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A+	Consolidated Edison	3.00%	3.60%	3.40%	3.33%
A+	Exelon Corporation	4.50%	2.00%	2.20%	2.90%
A+	FPL Group Inc.	8.00%	7.20%	7.90%	7.70%
A	Allete, Inc.	-1.00%	4.00%	4.00%	2.33%
A	Alliant Energy Corp.	4.00%	3.00%	4.30%	3.77%
A	CH Energy Group	3.50%	N/A	N/A	3.50%
A	MGE Energy Inc.	6.00%	5.00%	5.00%	5.33%
A	NStar	8.00%	6.00%	5.60%	6.53%
A	OGE Energy Corp.	4.50%	5.50%	6.00%	5.33%
A	Otter Tail Corporation	4.00%	5.00%	0.40%	3.13%
A	Scana Corp.	4.00%	5.10%	5.80%	4.97%
A	Sempra Energy	5.50%	7.00%	7.00%	6.50%
A	Southern Co.	4.50%	7.60%	4.50%	5.53%
A	Vectren Corp.	5.00%	7.50%	6.30%	6.27%
B++	Allegheny Energy Corp.	7.00%	16.00%	14.00%	12.33%
B++	Ameren Corp.	1.00%	4.00%	3.00%	2.67%
B++	American Electric Power	3.00%	3.30%	3.00%	3.10%
B++	DPL Inc.	9.00%	6.20%	7.10%	7.43%
B++	Edison International	3.50%	5.00%	1.00%	3.17%
B++	El Paso Electric	6.50%	N/A	N/A	6.50%
B++	PG&E Corporation	6.50%	7.70%	7.30%	7.17%
B++	Portland General Electric	3.50%	6.70%	6.80%	5.67%
B++	Progress Energy, Inc.	6.00%	4.50%	4.50%	5.00%
B++	UIL Holdings Corp.	3.50%	4.00%	4.50%	4.00%
B++	Westar Energy	4.00%	5.00%	3.70%	4.23%
B++	Wisconsin Energy Corp.	8.00%	8.70%	9.90%	8.87%
B++	Xcel Energy	6.50%	5.70%	7.30%	6.50%

**2010 Capitalization Rate Study**  
**Gas and Electric Companies**  
**Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
B+	Avista Corporation	6.50%	5.00%	5.00%	5.50%
B+	Black Hills Corp.	8.50%	6.00%	6.00%	6.83%
B+	Cleco Corporation	9.50%	9.00%	9.00%	9.17%
B+	DTE Energy Co.	8.50%	4.50%	3.00%	5.33%
B+	Empire District Electric Co.	6.00%	N/A	N/A	6.00%
B+	Great Plains Energy Inc.	0.50%	5.00%	5.00%	3.50%
B+	Hawaiian Electric Industries	7.00%	11.30%	10.50%	9.60%
B+	Northeast Utilities	8.00%	8.90%	9.30%	8.73%
B+	Pinnacle West Capital	3.00%	7.00%	7.00%	5.67%
B	Centerpoint Energy, Inc.	3.00%	N/A	N/A	3.00%
B	Central Vermont PS	3.00%	N/A	N/A	3.00%
B	CMS Energy Corp.	10.00%	5.80%	5.60%	7.13%
B	NV Energy, Inc.	7.50%	9.30%	9.20%	8.67%
B	PNM Resources, Inc.	7.50%	6.30%	6.30%	6.70%
	Mean	5.37%	6.21%	5.84%	5.67%
	Median	5.50%	5.75%	5.70%	5.53%
	Weighted Average				5.41%

Sources: Columns a, b and c were extracted from Value Line.  
Column d was extracted from Zacks.com.  
Column e was extracted from ThomsonReuters.com.

**2010 Capitalization Rate Study**  
**Gas and Electric Companies**  
**Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/09	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
A+	Consolidated Edison	275,491,885	45.43	12,515.60	9,376.00	212.60	12,515.60	22,104.20	42.4%	1.0%	56.6%
A+	Exelon Corporation	659,377,386	48.87	32,223.77	11,411.00	87.00	32,223.77	43,721.77	26.1%	0.2%	73.7%
A+	FPL Group Inc.	413,347,264	52.82	21,833.00	15,601.00	0.00	21,833.00	37,434.00	41.7%	0.0%	58.3%
A	Allete, Inc.	34,891,615	32.68	1,140.26	628.40	0.00	1,140.26	1,768.66	35.5%	0.0%	64.5%
A	Alliant Energy Corp.	110,634,276	30.26	3,347.79	2,155.90	243.80	3,347.79	5,747.49	37.5%	4.2%	58.2%
A	CH Energy Group	15,804,806	42.52	672.02	463.80	21.00	672.02	1,156.82	40.1%	1.8%	58.1%
A	MGE Energy Inc.	23,113,638	35.74	826.08	272.50	0.00	826.08	1,098.58	24.8%	0.0%	75.2%
A	NStar	106,808,376	36.80	3,930.55	1,741.30	43.00	3,930.55	5,714.85	30.5%	0.8%	68.8%
A	OGE Energy Corp.	96,791,187	36.89	3,570.63	1,930.80	0.00	3,570.63	5,501.43	35.1%	0.0%	64.9%
A	Otter Tail Corporation	35,689,751	24.82	885.82	411.30	15.50	885.82	1,312.62	31.3%	1.2%	67.5%
A	Scana Corp.	123,132,614	37.68	4,639.64	4,166.00	113.00	4,639.64	8,918.64	46.7%	1.3%	52.0%
A	Sempra Energy	246,442,856	55.98	13,795.87	6,845.00	179.00	13,795.87	20,819.87	32.9%	0.9%	66.3%
A	Southern Co.	796,051,643	33.32	26,524.44	17,921.00	1,082.00	26,524.44	45,527.44	39.4%	2.4%	58.3%
A	Vectren Corp.	81,149,916	24.68	2,002.78	1,629.40	0.00	2,002.78	3,632.18	44.9%	0.0%	55.1%
	Mean								36.3%	1.0%	62.7%
	Median								36.5%	0.8%	61.4%
	Weighted Average								36.5%	1.0%	62.6%

Sources: Columns a, b, c, f and g were extracted from Value Line.  
Column d was acquired from CNNMoney.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study**  
**Gas and Electric Companies**  
**Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/09	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
B++	Allegheny Energy Corp.	169,562,824	23.48	3,981.34	4,327.40	0.00	3,981.34	8,308.74	52.1%	0.0%	47.9%
B++	Ameren Corp.	236,921,011	27.95	6,621.94	7,321.00	195.00	6,621.94	14,137.94	51.8%	1.4%	46.8%
B++	American Electric Power	477,658,465	34.79	16,617.74	15,713.00	61.00	16,617.74	32,391.74	48.5%	0.2%	51.3%
B++	DPL Inc.	119,765,729	27.60	3,305.53	1,375.80	22.90	3,305.53	4,704.23	29.2%	0.5%	70.3%
B++	Edison International	325,811,206	34.78	11,331.71	10,448.00	907.00	11,331.71	22,686.71	46.1%	4.0%	49.9%
B++	El Paso Electric	44,254,670	20.28	897.48	814.90	0.00	897.48	1,712.38	47.6%	0.0%	52.4%
B++	PG&E Corporation	370,960,212	44.65	16,563.37	10,767.00	258.00	16,563.37	27,588.37	39.0%	0.9%	60.0%
B++	Portland General Electric	75,191,682	20.41	1,534.66	1,408.00	0.00	1,534.66	2,942.66	47.8%	0.0%	52.2%
B++	Progress Energy, Inc.	279,626,073	41.01	11,467.47	10,834.00	92.80	11,467.47	22,394.27	48.4%	0.4%	51.2%
B++	UIL Holdings Corp.	29,929,591	28.08	840.42	604.20	0.00	840.42	1,444.62	41.8%	0.0%	58.2%
B++	Westar Energy	109,029,629	21.72	2,368.12	2,490.90	21.40	2,368.12	4,880.42	51.0%	0.4%	48.5%
B++	Wisconsin Energy Corp.	116,911,016	49.83	5,825.68	3,631.20	30.40	5,825.68	9,487.28	38.3%	0.3%	61.4%
B++	Xcel Energy	456,645,598	21.22	9,690.02	7,945.40	105.00	9,690.02	17,740.42	44.8%	0.6%	54.6%
B+	Avista Corporation	54,779,281	21.59	1,182.68	1,112.50	0.00	1,182.68	2,295.18	48.5%	0.0%	51.5%
B+	Black Hills Corp.	38,866,236	26.63	1,035.01	719.20	0.00	1,035.01	1,754.21	41.0%	0.0%	59.0%
B+	Cleco Corporation	60,479,653	27.33	1,652.91	1,238.20	1.00	1,652.91	2,892.11	42.8%	0.0%	57.2%
B+	DTE Energy Co.	164,928,049	43.59	7,189.21	7,874.00	0.00	7,189.21	15,063.21	52.3%	0.0%	47.7%
B+	Empire District Electric Co.	36,062,857	18.73	675.46	637.10	0.00	675.46	1,312.56	48.5%	0.0%	51.5%
B+	Great Plains Energy Inc.	135,323,599	19.39	2,623.92	3,221.20	39.00	2,623.92	5,884.12	54.7%	0.7%	44.6%
B+	Hawaiian Electric Industries	92,060,118	20.90	1,924.06	1,309.80	34.30	1,924.06	3,268.16	40.1%	1.0%	58.9%
B+	Northeast Utilities	175,281,532	25.79	4,520.51	4,909.40	116.20	4,520.51	9,546.11	51.4%	1.2%	47.4%
B+	Pinnacle West Capital	101,281,436	36.05	3,651.20	3,519.90	0.00	3,651.20	7,171.10	49.1%	0.0%	50.9%
B	Centerpoint Energy, Inc.	390,371,433	14.51	5,664.29	8,827.00	0.00	5,664.29	14,491.29	60.9%	0.0%	39.1%
B	Central Vermont PS	11,690,300	20.80	243.16	182.80	9.10	243.16	435.06	42.0%	2.1%	55.9%
B	CMS Energy Corp.	229,606,943	15.66	3,595.64	9,086.00	287.00	3,595.64	12,968.64	70.1%	2.2%	27.7%
B	NV Energy, Inc.	234,684,457	12.38	2,905.39	5,549.10	0.00	2,905.39	8,454.49	65.6%	0.0%	34.4%
B	PNM Resources, Inc.	86,673,174	12.52	1,085.15	1,531.00	11.50	1,085.15	2,627.65	58.3%	0.4%	41.3%
	Mean								48.6%	0.6%	50.8%
	Median								48.5%	0.3%	51.3%
	Weighted Average								49.3%	0.8%	49.9%

Sources: Columns a, b, c, f and g were extracted from Value Line.  
Column d was acquired from CNNMoney.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study**  
**Gas and Electric Companies**  
**Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
A+	Consolidated Edison	0.65	0.28	0.28	0.40	0.35	0.70	0.45
A+	Exelon Corporation	0.85	0.57	0.57	0.66	0.37	0.31	0.71
A+	FPL Group Inc.	0.75	0.64	0.65	0.68	0.20	0.52	0.53
A	Allete, Inc.	0.70	0.66	0.66	0.67	0.34	0.40	0.55
A	Alliant Energy Corp.	0.70	0.57	0.57	0.61	0.15	0.48	0.50
A	CH Energy Group	0.65	0.36	0.40	0.47	0.37	0.52	0.49
A	MGE Energy Inc.	0.65	0.26	0.26	0.39	0.37	0.31	0.54
A	NStar	0.65	0.26	0.25	0.39	0.38	0.61	0.47
A	OGE Energy Corp.	0.75	0.76	0.76	0.76	0.32	0.53	0.55
A	Otter Tail Corporation	0.95	1.10	1.10	1.05	0.20	0.35	0.74
A	Scana Corp.	0.65	0.57	0.57	0.60	0.31	0.75	0.43
A	Sempra Energy	0.85	0.58	0.61	0.68	0.30	0.41	0.66
A	Southern Co.	0.55	0.33	0.34	0.41	0.35	0.55	0.41
A	Vectren Corp.	0.75	0.37	0.37	0.50	0.35	0.61	0.54
	Mean	0.72	0.52	0.53	0.59		0.50	0.54
	Median	0.70	0.57	0.57	0.61		0.52	0.53
	Weighted Average				0.57		0.50	0.54
	Relevered Beta based on 45% Debt Capital Structure and mean Unlevered Beta <sup>3</sup>							0.81
	Relevered Beta based on 45% Debt Capital Structure and weighted average Unlevered Beta <sup>3</sup>							0.81

Sources: Columns a, b, c and g were extracted from Value Line.

Column d was extracted from Zacks.com.

Column e was extracted from Standard and Poor's Stock Reports.

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta = Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

<sup>3</sup> Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%).



**2010 Capitalization Rate Study**  
**Gas and Electric Companies**  
**Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line		Value Line	Zacks	Standard & Poor's	Average	Company's Tax	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
Rating	Company Name	Beta	Beta	Beta	Beta	Rate		
B++	Allegheny Energy Corp	0.95	0.86	0.86	0.89	0.40	0.68	0.67
B++	Ameren Corp.	0.80	0.74	0.74	0.76	0.33	0.70	0.54
B++	American Electric Power	0.70	0.57	0.57	0.61	0.33	0.91	0.43
B++	DPL Inc.	0.60	0.57	0.58	0.58	0.32	0.47	0.45
B++	Edison International	0.80	0.72	0.70	0.74	0.30	0.77	0.52
B++	El Paso Electric	0.75	0.69	N/A	0.72	0.33	0.72	0.51
B++	PG&E Corporation	0.55	0.32	0.32	0.40	0.34	0.53	0.41
B++	Portland General Electric	0.75	0.76	0.75	0.75	0.29	0.82	0.47
B++	Progress Energy, Inc.	0.65	0.40	N/A	0.53	0.33	0.93	0.40
B++	UIL Holdings Corp.	0.70	0.73	0.72	0.72	0.40	0.61	0.51
B++	Westar Energy	0.75	0.64	0.63	0.67	0.28	0.90	0.46
B++	Wisconsin Energy Corp.	0.65	0.38	0.38	0.47	0.37	0.63	0.47
B++	Xcel Energy	0.65	0.45	0.45	0.52	0.35	0.82	0.42
B+	Avista Corporation	0.70	0.80	0.79	0.76	0.35	0.87	0.45
B+	Black Hills Corp.	0.80	1.10	1.11	1.00	0.29	0.56	0.57
B+	Cleco Corporation	0.65	0.52	0.54	0.57	0.25	0.61	0.45
B+	DTE Energy Co.	0.75	0.74	0.73	0.74	0.32	1.02	0.44
B+	Empire District Electric Co.	0.75	0.72	0.72	0.73	0.34	0.83	0.48
B+	Great Plains Energy Inc.	0.75	0.79	0.79	0.78	0.30	0.71	0.50
B+	Hawaiian Electric Industries	0.70	0.61	0.60	0.64	0.34	0.60	0.50
B+	Northeast Utilities	0.70	0.52	0.49	0.57	0.34	1.09	0.41
B+	Pinnacle West Capital	0.75	0.65	0.66	0.69	0.35	0.89	0.48
B	Centerpoint Energy, Inc.	0.80	0.73	0.74	0.76	0.34	1.69	0.38
B	Central Vermont PS	0.80	0.64	0.66	0.70	0.35	0.61	0.57
B	CMS Energy Corp.	0.80	0.60	0.61	0.67	0.36	2.19	0.33
B	NV Energy, Inc.	0.90	0.73	0.72	0.78	0.31	1.64	0.42
B	PNM Resources, Inc.	0.95	1.03	1.01	1.00	0.40	1.23	0.55
	Mean	0.74	0.67	0.67	0.69		0.89	0.47
	Median	0.75	0.69	0.70	0.72		0.82	0.47
	Weighted Average				0.64		0.94	0.45
	Relevered Beta based on 47% Debt Capital Structure and mean Unlevered Beta <sup>3</sup>							0.73
	Relevered Beta based on 47% Debt Capital Structure and weighted average Unlevered Beta <sup>3</sup>							0.69

Sources: Columns a, b, c and g were extracted from Value Line.

Column d was extracted from Zacks.com.

Column e was extracted from Standard and Poor's Stock Reports

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta = Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

<sup>3</sup> Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%).

**2010 Capitalization Rate Study**  
**Natural Gas Distribution Companies**  
**Flotation Cost Adjustment**

Equity				Preferred Stock				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A, B++, B+, B	10.50%	4.50%	10.99%	Baa1	6.50%	1.70%	6.62%	Aa2	5.74%	1.70%	5.84%
	10.82%	4.50%	11.33%	Baa2	6.73%	1.70%	6.85%	Aa3	5.85%	1.70%	5.95%
NR1	12.25%	4.50%	12.83%	Baa3	6.96%	1.70%	7.08%	A1	5.95%	1.70%	6.06%
NR2	12.75%	4.50%	13.35%	Ba1	7.18%	1.70%	7.31%	A2	6.06%	1.70%	6.16%
				Ba2	7.41%	1.70%	7.54%	A3	6.21%	1.70%	6.32%
				Ba3	7.64%	1.70%	7.77%	Baa1	6.36%	1.70%	6.47%
								Baa2	6.51%	1.70%	6.62%
								Baa3	6.66%	1.70%	6.78%
								NR	7.71%	1.70%	7.84%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

**2010 Capitalization Rate Study  
Natural Gas Distribution Companies  
Summary of Rates of Return**

Common Equity		Preferred Stock			Bonds		
Value Line Rating	Rate of Return <sup>1</sup>	Moody's P/S Yields	Moody's Rating	Rate of Return <sup>2</sup>	Moody's Bond Yields	Moody's Rating	Rate of Return <sup>2</sup>
A, B++, B+, B	10.50%		Aa1	5.71%	Aaa=N/A	Aaa2	5.16%
	10.82%	Aa=N/A	Aa2	5.80%		Aaa3	5.28%
			Aa3	5.82%		Aa1	5.41%
NR1 <sup>3</sup>	12.25%	A=6.05%	A1	5.94%	Aa=5.54	Aa2	5.54%
			A2	6.05%		Aa3	5.65%
NR2 <sup>3</sup>	12.75%		A3	6.28%		A1	5.75%
		Baa=6.73%	Baa1	6.50%	A=5.86	A2	5.86%
			Baa2	6.73%		A3	6.01%
			Baa3	6.96%		Baa1	6.16%
			Ba1	7.18%	Baa=6.31	Baa2	6.31%
			Ba2	7.41%		Baa3	6.46%
			Ba3	7.64%		Ba1	6.61%
			B1	7.86%		Ba2	6.76%
			B2	8.09%		Ba3	6.91%
			B3	8.32%		B1	7.06%
			Caa1	8.54%		B2	7.21%
			Caa3	8.77%		B3	7.36%
						NR	7.51%

<sup>1</sup>The Rate of Return on Common Equity was developed by staff based on the relative risk of the utilities in conjunction with the results of the various financial models and pertinent information from various sources. Consideration was given to the latest CPUC decisions that established rates of return. For 2010, Southern California Gas' return on equity and return on rate base are 10.82% and 8.68%, respectively (D.97-07-054).

<sup>2</sup>The Rates of Return on Preferred Stocks and Bonds were based on the 2009 Moody's "Utility Preferred Stock Yields" and "Utility Bond Yields" reports. Because Moody assigns yields only to groups Aaa, Aa, A and Baa for bonds; and Aa, A, and Baa for preferred stock, staff interpolates the difference between these groups to further refine the ratings.

<sup>3</sup>For companies that do not have financial ratings (NR), staff judgment is used in assigning the Rate of Return on Common Equity based on the financial information collected from various sources.

**2010 Capitalization Rate Study**  
**Natural Gas Distribution Companies**  
**Capital Asset Pricing Model - Ex Ante**

Component	Value Line Ratings	
	A, B++	B+, B
Expected Future Return, S&P 500	8.47%	8.47%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	4.60%	4.60%
Risk Premium	3.87%	3.87%
Beta <sup>2</sup>	0.68	0.71
Adjusted Risk Premium	2.61%	2.74%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	4.60%	4.60%
<b>Projected Return on Common Equity</b>	<b>7.21%</b>	<b>7.34%</b>

<sup>1</sup> WSJ.com, January 4, 2010

<sup>2</sup> The estimated betas were derived from a sample of natural gas distribution companies with similar ratings.

**2010 Capitalization Rate Study**  
**Natural Gas Distribution Companies**  
**Capital Asset Pricing Model - Ex Post**

Component	Value Line Ratings	
	A, B++	B+, B
Common Stock Return (1926 - 2009) <sup>1</sup>	11.80%	11.80%
Less: Income-Long Term Government Bonds (1926-2009) <sup>1</sup>	5.20%	5.20%
Risk Premium	6.60%	6.60%
Beta <sup>2</sup>	0.68	0.71
Adjusted Risk Premium	4.46%	4.67%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>3</sup>	4.60%	4.60%
<b>Projected Return on Common Equity</b>	<b>9.05%</b>	<b>9.26%</b>

<sup>1</sup> Ibbotson Associates Study, 2010

<sup>2</sup> The estimated betas were derived from a sample of natural gas distribution companies with similar ratings.

<sup>3</sup> WSJ.com, January 4, 2010

**2010 Capitalization Rate Study**  
**Natural Gas Distribution Companies**  
**Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/09	Est. 2010 Earnings	2009 Earnings	2009 Dividends	Est. 2010 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
A	New Jersey Resources Corp.	37.40	2.60	2.40	1.24	1.36	3.64%	7.00%	6.50%	6.95%	10.64%	10.14%
A	Nicor Inc.	42.10	2.85	2.75	1.86	1.86	4.42%	NIL	3.37%	6.77%	4.42%	7.78%
A	Northwest Natural Gas Co.	45.04	2.85	2.85	1.60	1.68	3.73%	6.50%	5.57%	6.33%	10.23%	9.30%
A	WGL Holdings, Inc.	33.54	2.30	2.53	1.47	1.51	4.50%	3.00%	4.00%	6.86%	7.50%	8.50%
B++	AGL Resources, Inc.	36.47	2.90	2.75	1.72	1.76	4.83%	2.50%	4.00%	7.95%	7.33%	8.83%
B++	Piedmont Natural Gas Co.	26.75	1.85	1.60	1.07	1.11	4.15%	3.50%	7.20%	6.92%	7.65%	11.35%
B++	South Jersey Industries, Inc.	38.18	2.60	2.35	1.22	1.34	3.51%	8.00%	9.80%	6.81%	11.51%	13.31%
B++	UGI Corp.	24.19	2.30	2.36	0.79	0.86	3.56%	5.50%	5.00%	9.51%	9.06%	8.56%
	Mean						4.04%	5.14%	5.68%	7.26%	8.54%	9.72%
	Median						3.94%	5.50%	5.28%	6.89%	8.35%	9.06%
	Weighted Average										8.25%	9.39%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from CNNMoney.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study**  
**Natural Gas Distribution Companies**  
**Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/09	Est. 2010 Earnings	2009 Earnings	2009 Dividends	Est. 2010 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B+	Atmos Energy Corp.	29.40	2.20	1.97	1.32	1.34	4.56%	1.50%	4.67%	7.48%	6.06%	9.22%
B+	Laclede Group, Inc.	33.77	2.60	2.92	1.53	1.57	4.65%	2.50%	3.25%	7.70%	7.15%	7.90%
B	NiSource, Inc.	15.38	1.15	1.00	0.92	0.92	5.98%	NIL	2.67%	7.48%	5.98%	8.65%
B	Southwest Gas Corp.	28.53	2.05	1.90	0.95	1.00	3.51%	5.00%	6.33%	7.19%	8.51%	9.84%
	Mean						4.67%	3.00%	4.23%	7.46%	6.92%	8.90%
	Median						4.60%	2.50%	3.96%	7.48%	6.60%	8.94%
	Weighted Average										6.40%	8.90%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from CNNMoney.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study  
Natural Gas Distribution Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A	New Jersey Resources Corp.	5.50%	7.00%	7.00%	6.50%
A	Nicor Inc.	1.50%	4.20%	4.40%	3.37%
A	Northwest Natural Gas Co.	5.00%	5.70%	6.00%	5.57%
A	WGL Holdings, Inc.	4.00%	N/A	N/A	4.00%
B++	AGL Resources, Inc.	3.50%	4.50%	4.00%	4.00%
B++	Piedmont Natural Gas Co.	8.00%	7.00%	6.60%	7.20%
B++	South Jersey Industries, Inc.	5.50%	12.40%	11.50%	9.80%
B++	UGI Corp.	4.00%	6.00%	N/A	5.00%
B+	Atmos Energy Corp.	4.00%	5.00%	5.00%	4.67%
B+	Laclede Group, Inc.	3.50%	3.00%	N/A	3.25%
B	NiSource, Inc.	2.00%	3.00%	3.00%	2.67%
B	Southwest Gas Corp.	6.00%	7.00%	6.00%	6.33%
	Mean	4.38%	5.89%	5.94%	5.20%
	Median	4.00%	5.70%	6.00%	4.83%
	Weighted Average				4.53%

Sources: Columns a, b and c were extracted from Value Line.  
Column d was extracted from Zacks.com.  
Column e was extracted from ThomsonReuters.com.



**2010 Capitalization Rate Study**  
**Natural Gas Distribution Companies**  
**Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/09	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
A	New Jersey Resources Corp.	41,585,243	37.40	1,555.29	455.50	0.00	1,555.29	2,010.79	22.7%	0.0%	77.3%
A	Nicor Inc.	45,231,331	42.10	1,904.24	498.80	0.60	1,904.24	2,403.64	20.8%	0.0%	79.2%
A	Northwest Natural Gas Co.	26,517,363	45.04	1,194.34	637.00	0.00	1,194.34	1,831.34	34.8%	0.0%	65.2%
A	WGL Holdings, Inc.	50,264,447	33.54	1,685.87	561.80	28.20	1,685.87	2,275.87	24.7%	1.2%	74.1%
B++	AGL Resources, Inc.	77,398,732	36.47	2,822.73	1,975.00	0.00	2,822.73	4,797.73	41.2%	0.0%	58.8%
B++	Piedmont Natural Gas Co.	73,110,548	26.75	1,955.71	792.80	0.00	1,955.71	2,748.51	28.8%	0.0%	71.2%
B++	South Jersey Industries, Inc.	29,796,232	38.18	1,137.62	332.70	0.00	1,137.62	1,470.32	22.6%	0.0%	77.4%
B++	UGI Corp.	108,782,302	24.19	2,631.44	2,038.60	0.00	2,631.44	4,670.04	43.7%	0.0%	56.3%
	Mean								29.9%	0.2%	69.9%
	Median								26.8%	0.0%	72.6%
	Weighted Average								32.8%	0.1%	67.0%

Sources: Columns a, b, c, f and g were extracted from Value Line.  
Column d was acquired from CNNMoney.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study**  
**Natural Gas Distribution Companies**  
**Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/09	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
B+	Atmos Energy Corp.	92,272,478	29.40	2,712.81	2,169.40	0.00	2,712.81	4,882.21	44.4%	0.0%	55.6%
B+	Laclede Group, Inc.	22,167,303	33.77	748.59	389.20	0.00	748.59	1,137.79	34.2%	0.0%	65.8%
B	NiSource, Inc.	275,754,599	15.38	4,241.11	6,560.70	0.00	4,241.11	10,801.81	60.7%	0.0%	39.3%
B	Southwest Gas Corp.	44,955,318	28.53	1,282.58	1,226.60	0.00	1,282.58	2,509.18	48.9%	0.0%	51.1%
	Mean								47.1%	0.0%	52.9%
	Median								46.7%	0.0%	53.3%
	Weighted Average								53.5%	0.0%	46.5%

Sources: Columns a, b, c, f and g were extracted from Value Line.  
Column d was acquired from CNNMoney.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study**  
**Natural Gas Distribution Companies**  
**Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
A	New Jersey Resources Corp.	0.65	0.12	0.12	0.30	0.39	0.26	0.56
A	Nicor Inc.	0.75	0.36	N/A	0.56	0.27	0.26	0.63
A	Northwest Natural Gas Co.	0.60	0.23	0.25	0.36	0.37	0.47	0.46
A	WGL Holdings, Inc.	0.65	0.16	N/A	0.41	0.37	0.38	0.52
B++	AGL Resources, Inc.	0.75	0.38	0.39	0.51	0.35	0.62	0.53
B++	Piedmont Natural Gas Co.	0.65	0.18	0.17	0.33	0.35	0.39	0.52
B++	South Jersey Industries, Inc.	0.65	0.20	0.20	0.35	0.36	0.34	0.53
B++	UGI Corp.	0.70	0.30	0.30	0.43	0.29	0.69	0.47
	Mean	0.68	0.24	0.24	0.41		0.43	0.53
	Median	0.65	0.22	0.23	0.38		0.39	0.53
	Weighted Average				0.42		0.48	0.52
	Relevered Beta based on 45% Debt Capital Structure and mean Unlevered Beta <sup>3</sup>							0.79
	Relevered Beta based on 45% Debt Capital Structure and weighted average Unlevered Beta <sup>3</sup>							0.78

Sources: Columns a, b, c and g were extracted from Value Line.  
Column d was extracted from Zacks.com.  
Column e was extracted from Standard and Poor's Stock Reports.

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta = Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

<sup>3</sup> Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%).

**2010 Capitalization Rate Study**  
**Natural Gas Distribution Companies**  
**Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
B+	Atmos Energy Corp.	0.65	0.49	0.49	0.54	0.34	0.90	0.41
B+	Laclede Group, Inc.	0.60	0.01	0.01	0.21	0.34	0.48	0.46
B	NiSource, Inc.	0.85	0.82	N/A	0.84	0.37	1.36	0.46
B	Southwest Gas Corp.	0.75	0.70	0.70	0.72	0.33	1.05	0.44
	Mean	0.71	0.51	0.40	0.58		0.95	0.44
	Median	0.70	0.60	0.49	0.63		0.98	0.45
	Weighted Average				0.71		1.15	0.44
	Relevered Beta based on 50% Debt Capital Structure and mean Unlevered Beta <sup>3</sup>							0.70
	Relevered Beta based on 50% Debt Capital Structure and weighted average Unlevered Beta <sup>3</sup>							0.71

Sources: Columns a, b, c and g were extracted from Value Line.  
Column d was extracted from Zacks.com.  
Column e was extracted from Standard and Poor's Stock Reports.

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta =  $\text{Beta} / [1 + (1 - t_c)(D/E)]$ ; where D/E is the debt to equity ratio,  $t_c$  is the company's most recent tax rate.

<sup>3</sup> Relevered Beta =  $[\text{Unlevered Beta}] [1 + (1 - t_p)(D/E)]$ ; where D/E is the debt to equity ratio,  $t_p$  is the prospective purchaser's tax rate (assumed to be 40%).

**2010 Capitalization Rate Study  
Water Utility Companies  
Flotation Cost Adjustment**

<b>Equity</b>				<b>Debt</b>			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A, B++, B+, B, C++	10.20%	4.50%	10.68%	A2	5.86%	1.70%	5.96%
				A3	6.01%	1.70%	6.11%
				Baa1	6.16%	1.70%	6.27%
				Baa2	6.31%	1.70%	6.42%
				Baa3	6.46%	1.70%	6.57%
				Ba1	6.61%	1.70%	6.72%
				Ba2	6.76%	1.70%	6.88%
				Ba3	6.91%	1.70%	7.03%
				B1	7.06%	1.70%	7.18%
				B2	7.21%	1.70%	7.33%
				B3	7.36%	1.70%	7.49%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

**2010 Capitalization Rate Study  
Water Utility Companies  
Summary of Rates of Return**

Common Equity		Preferred Stock			Bonds		
Value Line Rating	Rate of Return <sup>1</sup>	Moody's P/S Yields	Moody's Rating	Rate of Return <sup>2</sup>	Moody's Bond Yields	Moody's Rating	Rate of Return <sup>2</sup>
A, B++, B+, B, C++	10.20%	Aa=N/A	Aa1	5.71%	Aaa=N/A	Aaa2	5.16%
			Aa2	5.80%		Aaa3	5.28%
			Aa3	5.82%		Aa1	5.41%
		A=6.05%	A1	5.94%	Aa=5.54	Aa2	5.54%
			A2	6.05%		Aa3	5.65%
			A3	6.28%		A1	5.75%
		Baa=6.73%	Baa1	6.50%	A=5.86	A2	5.86%
			Baa2	6.73%		A3	6.01%
			Baa3	6.96%		Baa1	6.16%
			Ba1	7.18%	Baa=6.31	Baa2	6.31%
			Ba2	7.41%		Baa3	6.46%
			Ba3	7.64%		Ba1	6.61%
			B1	7.86%		Ba2	6.76%
			B2	8.09%		Ba3	6.91%
			B3	8.32%		B1	7.06%
			Caa1	8.54%		B2	7.21%
			Caa3	8.77%		B3	7.36%
						NR	7.51%

<sup>1</sup>The Rate of Return on Common Equity was developed by staff based on the relative risk of the utilities in conjunction with the results of the various financial models, CPUC decisions that established rates of return, and pertinent information from various sources. For 2010, the return on equity (ROE) and return on rate base (ROR) for Golden State Water Company are 10.20% and 8.87%, respectively (D.08-01-043).

<sup>2</sup>The Rates of Return on Preferred Stocks and Bonds were based on the 2009 Moody's "Utility Preferred Stock Yields" and "Utility Bond Yields" reports. Because Moody assigns yields only to groups Aaa, Aa, A and Baa for bonds; and Aa, A, and Baa for preferred stock, staff interpolates the difference between these groups to further refine the ratings.

**2010 Capitalization Rate Study**  
**Water Utility Companies**  
**Capital Asset Pricing Model - Ex Ante**

Component	Value Line Ratings
	A, B++, B+, B, C++
Expected Future Return, S&P 500	8.47%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	<u>4.60%</u>
Risk Premium	3.87%
Beta <sup>2</sup>	<u>0.52</u>
Adjusted Risk Premium	2.03%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	<u>4.60%</u>
<b>Projected Return on Common Equity</b>	<b><u><u>6.63%</u></u></b>

<sup>1</sup> WSJ.com, January 4, 2010

<sup>2</sup> The estimated betas were derived from a sample of water companies with similar ratings.

**2010 Capitalization Rate Study**  
**Water Utility Companies**  
**Capital Asset Pricing Model - Ex Post**

Component	Value Line Ratings
	A, B++, B+, B, C++
Common Stock Return (1926 - 2009) <sup>1</sup>	11.80%
Less: Income-Long Term Government Bonds (1926-2009) <sup>1</sup>	5.20%
Risk Premium	6.60%
Beta <sup>2</sup>	0.52
Adjusted Risk Premium	3.46%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>3</sup>	4.60%
<b>Projected Return on Common Equity</b>	<b>8.06%</b>

<sup>1</sup> Ibbotson Associates Study, 2010

<sup>2</sup> The estimated betas were derived from a sample of water companies with similar ratings.

<sup>3</sup> WSJ.com, January 4, 2010



**2010 Capitalization Rate Study**  
**Water Utility Companies**  
**Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/09	Est. 2010 Earnings	2009 Earnings	2009 Dividends	Est. 2010 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B++	American States Water Co.	35.41	2.00	1.85	1.01	1.05	2.97%	4.50%	6.75%	5.65%	7.47%	9.72%
B++	California Water Service Group	36.82	2.10	1.99	1.18	1.19	3.23%	1.50%	7.07%	5.70%	4.73%	10.30%
B+	Aqua America, Inc.	17.51	0.90	0.80	0.55	0.59	3.37%	6.50%	8.67%	5.14%	9.87%	12.04%
B	American Water Works Co., Inc.	22.41	1.40	1.28	0.82	0.86	3.84%	39.00%	9.80%	6.25%	42.84%	13.64%
C++	SouthWest Water Co.	5.89	0.30	0.16	0.13	0.20	3.40%	-2.00%	12.00%	5.09%	1.40%	15.40%
	Mean						3.36%	9.90%	8.86%	5.57%	13.26%	12.22%
	Median						3.37%	4.50%	8.67%	5.65%	7.47%	12.04%
	Weighted Average										29.00%	12.79%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from CNNMoney.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study**  
**Water Utility Companies**  
**Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
B++	American States Water Co.	9.50%	4.00%	N/A	6.75%
B++	California Water Service Group	8.50%	6.70%	6.00%	7.07%
B+	Aqua America, Inc.	10.00%	7.70%	8.30%	8.67%
B	American Water Works Co., Inc.	NMF	9.10%	10.50%	9.80%
C++	SouthWest Water Co.	12.00%	N/A	N/A	12.00%
	Mean	10.00%	6.88%	8.27%	8.86%
	Median	9.75%	7.20%	8.30%	8.67%
	Weighted Average				9.17%

Sources: Columns a, b and c were extracted from Value Line.  
Column d was extracted from Zacks.com.  
Column e was extracted from ThomsonReuters.com.

**2010 Capitalization Rate Study**  
**Water Utility Companies**  
**Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/09	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
B++	American States Water Co.	18,512,032	35.41	655.51	306.30	0.00	655.51	961.81	31.8%	0.0%	68.2%
B++	California Water Service Group	20,744,952	36.82	763.83	373.50	0.00	763.83	1,137.33	32.8%	0.0%	67.2%
B+	Aqua America, Inc.	136,270,613	17.51	2,386.10	1,265.40	0.00	2,386.10	3,651.50	34.7%	0.0%	65.3%
B	American Water Works Co., Inc.	174,600,300	22.41	3,912.79	5,197.70	28.60	3,912.79	9,139.09	56.9%	0.3%	42.8%
C++	SouthWest Water Co.	24,875,369	5.89	146.52	153.50	0.46	146.52	300.47	51.1%	0.2%	48.8%
	Mean								41.5%	0.1%	58.4%
	Median								34.7%	0.0%	65.3%
	Weighted Average								48.0%	0.2%	51.8%

Sources: Columns a, b, c, f and g were extracted from Value Line.

Column d was acquired from CNNMoney.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study**  
**Water Utility Companies**  
**Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
B++	American States Water Co.	0.80	0.35	0.35	0.50	0.39	0.44	0.39
B++	California Water Service Group	0.75	0.42	0.49	0.55	0.40	0.39	0.45
B+	Aqua America, Inc.	0.65	0.17	0.17	0.33	0.39	0.43	0.26
B	American Water Works Co.	NMF	0.56	N/A	0.56	0.39	1.38	0.30
	Mean	0.73	0.38	0.34	0.49		0.66	0.35
	Median	0.75	0.39	0.35	0.53		0.44	0.35
	Weighted Average				0.50		1.01	0.31
	Relevered Beta based on 45% Debt Capital Structure and mean unlevered Beta <sup>3</sup>							0.52
	Relevered Beta based on 45% Debt Capital structure and weighted average Beta <sup>3</sup>							0.46

Sources: Columns a, b, c and g were extracted from Value Line.

Column d was extracted from Zacks.com.

Column e was extracted from Standard and Poor's Stock Reports.

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta =  $\text{Beta} / [1 + (1 - t_c)(D/E)]$ ; where D/E is the debt to equity ratio,  $t_c$  is the company's most recent tax rate.

<sup>3</sup> Relevered Beta =  $[\text{Unlevered Beta}] [1 + (1 - t_p)(D/E)]$ ; where D/E is the debt to equity ratio,  $t_p$  is the prospective purchaser's tax rate (assumed to be 40%).

**California State Board of Equalization  
State-Assessed Properties Division  
2010 Capitalization Rate Study  
Natural Gas Transmission Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
153	Transwestern Pipeline Company	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
180	North Baja Pipeline, LLC	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
187	Mojave Pipeline Company	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
188	Kern River Gas Transmission Company	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
189	Standard Pacific Gas Line Incorporated	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
190	Tuscarora Gas Transmission Company	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
196	Questar Southern Trails Pipeline Company	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%
197	El Paso Natural Gas Company	Not Rated	Not Rated	75%	25%	10.73%	6.57%	9.69%

**2010 Capitalization Rate Study  
Natural Gas Transmission Companies  
Industry Notes**

- Interstate gas transmission companies are regulated by the Federal Energy Regulatory Commission (FERC).
- Staff relied upon the results of the following models in the development of equity rates:
  1. Discounted Cash Flow
  2. Capital Asset Pricing Model (Ex Post and Ex Ante)

**2010 Capitalization Rate Study  
Natural Gas Transmission Companies  
Flotation Cost Adjustment**

<b>Equity</b>				<b>Debt</b>			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
Not Rated	10.25%	4.50%	10.73%	Not Rated	6.46%	1.70%	6.57%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

Staff applied a bond rating of Baa3 for the Natural Gas Transmission Companies, which represents the estimated cost of debt for the companies in the study.

**2010 Capitalization Rate Study**  
**Natural Gas Transmission Companies**  
**Comparison of Return on Common Equity**

Description	2010	2009	Change
E/P Ratio - Mean	5.53%	10.48%	-4.95%
E/P Ratio - Median	5.50%	9.94%	-4.44%
Dividends Yield + Dividends Growth - Mean	6.45%	10.49%	-4.04%
Dividends Yield + Dividends Growth - Median	5.64%	8.38%	-2.74%
Dividends Yield + Earnings Growth - Mean	8.28%	11.20%	-2.92%
Dividends Yield + Earnings Growth - Median	7.37%	10.57%	-3.20%
Capital Asset Pricing Model (CAPM) - Ex Ante	9.09%	10.36%	-1.27%
Capital Asset Pricing Model (CAPM) - Ex Post	12.30%	9.76%	2.54%
State-Assessed Properties Division Recommendation:	10.25%	11.00%	-0.75%

The Discounted Cash Flow (DCF) model is computed using data from a sample of gas transmission companies with similar risk and operations.

The information considered by staff includes the results of DCF analysis (Dividends Yield + Dividends Growth and Dividends Yield + Earnings Growth) and the results of the Capital Asset Pricing Model (CAPM) analysis.



**2010 Capitalization Rate Study**  
**Natural Gas Transmission Companies**  
**Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/09	2010 Est. Earnings	2009 Earnings	2009 Dividends	2010 Est. Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	Div Yld+ Div Grwh (h+i)	Div Yld+ Engs Grwh (h+j)
A	EOG Resources	97.30	3.40	2.95	0.58	0.62	0.64%	13.50%	6.73%	3.49%	14.14%	7.37%
B++	Cabot Oil & Gas	43.59	1.40	1.66	0.12	0.12	0.28%	6.50%	4.40%	3.21%	6.78%	4.68%
B++	Devon Energy	73.50	4.80	3.50	0.64	0.68	0.93%	7.50%	2.70%	6.53%	8.43%	3.63%
B++	Equitable Resources	43.92	1.80	1.15	0.88	0.88	2.00%	3.00%	13.17%	4.10%	5.00%	15.17%
B++	National Fuel Gas	50.00	2.75	2.60	1.31	1.32	2.64%	3.00%	9.50%	5.50%	5.64%	12.14%
B++	Questar Corp.	41.57	2.80	2.65	0.51	0.52	1.25%	3.50%	1.83%	6.74%	4.75%	3.08%
B	El Paso Corp.	9.83	0.90	1.22	0.20	0.04	0.41%	NMF	11.50%	9.16%	0.41%	11.91%
	Mean						1.16%	6.17%	7.12%	5.53%	6.45%	8.28%
	Median						0.93%	5.00%	6.73%	5.50%	5.64%	7.37%
	Weighted Average										9.28%	8.77%

Sources: Columns a, d, e, f, g and i were extracted from ValueLine.com.

Column c was extracted from Finance.Yahoo.com and represents December 31, 2009 closing stock prices.

Column j is an average of ValueLine.com, Zacks.com and ThomsonReuters.com.

**2010 Capitalization Rate Study**  
**Natural Gas Transmission Companies**  
**Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A	EOG Resources	2.50%	9.30%	8.40%	6.73%
B++	Cabot Oil & Gas	0.50%	4.00%	8.70%	4.40%
B++	Devon Energy	4.00%	3.80%	0.30%	2.70%
B++	Equitable Resources	9.50%	15.00%	15.00%	13.17%
B++	National Fuel Gas	4.50%	12.00%	12.00%	9.50%
B++	Questar Corp.	3.50%	1.00%	1.00%	1.83%
B	El Paso Corp.	11.50%	8.00%	15.00%	11.50%
	Mean	5.14%	7.59%	8.63%	7.12%
	Median	4.00%	8.00%	8.70%	6.73%
	Weighted Average				7.66%

**2010 Capitalization Rate Study**  
**Natural Gas Transmission Company**  
**Capital Asset Pricing Model - Ex Ante**

Component	Industry Computation
Expected Future Return, S&P 500	8.47%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	4.60%
Risk Premium	3.87%
Beta	1.16
Adjusted Risk Premium	4.49%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	4.60%
Projected Return on Common Equity	<b><u>9.09%</u></b>

<sup>1</sup> WSJ.com on January 4, 2010

**2010 Capitalization Rate Study**  
**Natural Gas Transmission Companies**  
**Capital Asset Pricing Model - Ex Post**

Component	Industry Computation
Common Stock Return (1926 - 2009) <sup>1</sup>	11.80%
Less: Income - Long Term Government Bonds <sup>1</sup>	5.20%
Risk Premium	6.60%
Beta	1.16
Adjusted Risk Premium	7.70%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>2</sup>	4.60%
Projected Return on Common Equity	<b><u>12.30%</u></b>

<sup>1</sup> Ibbotson Associates Study

<sup>2</sup> WSJ.com on January 4, 2010

**2010 Capitalization Rate Study**  
**Natural Gas Transmission Companies**  
**Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line's Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
A	EOG Resources	1.20	0.94	0.97	1.04	0.40	0.09	0.98
B++	Cabot Oil & Gas	1.35	1.27	1.34	1.32	0.37	0.15	1.21
B++	Devon Energy	1.25	1.14	1.14	1.18	0.25	0.19	1.03
B++	Equitable Resources	1.15	0.80	0.80	0.92	0.33	0.21	0.80
B++	National Fuel Gas	0.95	0.76	0.75	0.82	0.34	0.34	0.67
B++	Questar Corp.	1.20	0.80	0.81	0.94	0.36	0.21	0.83
B	El Paso Corp.	1.40	1.13	1.15	1.23	0.35	1.97	0.54
	Mean	1.21	0.98	0.99	1.06		0.45	0.87
	Median	1.20	0.94	0.97	1.04		0.21	0.83
	Weighted				1.08		0.17	0.97
	Relevered Beta based on 25% Debt Capital Structure					1.04 <sup>3</sup>		
	Relevered Beta based on 25% Debt Capital Structure and a weighted average Beta					1.16 <sup>3</sup>		

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta = Corrected Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's 2009 tax rate.

<sup>3</sup> Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is a prospective purchaser's tax rate (assumed to be 40%).

**2010 Capitalization Rate Study**  
**Natural Gas Transmission Companies**  
**Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l	m	n
Value Line	Bond	P/S		Common	Common	Market Value	L.T.	Pfd	Common	Total Cap.	L.T.	Pfd	Common
Rating	Rating	Rating	Company Name	Stock	Stock Price	Com. Stock	Debt	Stock	Stock	(\$mill)	Debt	Stock	Stock
				Outstanding	12/31/09	(e * f)	(\$millions)	(\$millions)	(\$millions)	(h + i + j)	%	%	%
A	NR	NR	EOG Resources	252,355,378	97.30	24,554.18	2,760.00	0.00	24,554.18	27,314.18	10.10%	0.00%	89.90%
B++	NR	NR	Cabot Oil & Gas	103,654,113	43.59	4,518.28	790.00	0.00	4,518.28	5,308.28	14.90%	0.00%	85.10%
B++	NR	NR	Devon Energy	444,100,000	73.50	32,641.35	5,850.00	0.00	32,641.35	38,491.35	15.20%	0.00%	84.80%
B++	NR	NR	Equitable Resources	130,919,247	43.92	5,749.97	1,949.20	0.00	5,749.97	7,699.17	25.30%	0.00%	74.70%
B++	NR	NR	National Fuel Gas	80,499,915	50.00	4,025.00	1,249.00	0.00	4,025.00	5,274.00	23.70%	0.00%	76.30%
B++	NR	NR	Questar Corp.	174,366,995	41.57	7,248.44	2,104.90	0.00	7,248.44	9,353.34	22.50%	0.00%	77.50%
B	NR	NR	El Paso Corp	701,270,947	9.83	6,893.5	13,600.00	0.00	6,893.49	20,493.49	66.40%	0.00%	33.60%
			Mean								25.44%	0.00%	74.56%
			Median								22.50%	0.00%	77.50%
			Weighted Average								24.85%	0.00%	75.15%

Sources: Columns a, e, h and i were extracted from ValueLine.

Column f was extracted from Finance.Yahoo.com and represents December 31, 2009 closing stock prices.

NR - Not Rated

**2010 Capitalization Rate Study**  
**Natural Gas Transmission Companies**  
**Bonds - Rate of Return**

Utility Bond Yield	Bond Rating				
	Aaa	Aa	A	Baa	Avg Utility
As of December 31, 2009	N/A	5.54%	5.86%	6.31%	5.90%

Source: Moody's Public Utility, Credit Market Trends Service.

**California State Board of Equalization  
State-Assessed Properties Division  
2010 Capitalization Rate Study  
Electric Generation Facilities**

Facility Type	Ratings		Capital Structure		Rates of Return		Basic Cap Rate <sup>3</sup>
	Value Line Financial	Moody's Bond	Common Equity	Debt	Common Equity	Debt	
<b>Modern Electric Generation Technology <sup>1</sup></b>	C++	B2	55%	45%	14.66%	8.44%	<b>11.86%</b>
<b>Older Electric Generation Technology <sup>2</sup></b>	C++	B2	55%	45%	16.75%	9.46%	<b>13.47%</b>

<sup>1</sup> Modern Electric Generation Technology - Generally high efficiency combined-cycle or simple cycle gas turbine electric generation facilities incorporating contemporary generation technologies.

<sup>2</sup> Older Electric Generation Technology - Generally older steam turbine electric generation facilities that were sold off by vertically integrated electric utilities and for which no replacements, other than for routine maintenance have been made.

<sup>3</sup> Staff may adjust the rates stated above if the specific situation of a facility warrants an adjustment to its basic capitalization rate.



**2010 Capitalization Rate Study  
Electric Generation Facilities  
Industry Notes**

- Staff relied primarily on the Capital Asset Pricing Model and Risk Premium Analysis in the development of equity rates. Consideration was given to both the ex post and ex ante risk premiums.
- The Discounted Cash Flow model was not relied upon because the Merchant Generators in the study are not currently paying dividends.
- Staff's recommended capital structure of 55% equity and 45% debt provides sufficient coverage of interest and principal payments on the debt.
- Staff added a risk premium of 100 basis points to the debt rate for older technology to recognize the market's perception of additional risk present in various facility types in this industry.
- The beta used in calculating the risk of electric generation facilities, relative to the risk of the overall market, reflects that a prospective purchaser using the recommended capital structure, would be subject to slightly more financial risk than the Merchant Generator companies in the sample. The beta also reflects that a prospective purchaser would be subject to significantly more risk than the Diversified Electric Utility companies in the sample.
- The following company was added to the 2010 Capitalization Rate Study sample for electric generation companies:
  1. Mirant Corporation

**2010 Capitalization Rate Study  
Electric Generation Facilities  
Flotation Cost Adjustment**

Facility Type	Equity			Debt		
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Recommended Rate	Flotation Cost in %	Adjusted Rate
Modern Electric Generation Technology <sup>1</sup>	14.00%	4.50%	14.66%	8.30%	1.70%	8.44%
Older Electric Generation Technology <sup>2</sup>	16.00%	4.50%	16.75%	9.30%	1.70%	9.46%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

<sup>1</sup> The Modern Electric Generation Technology Recommended Debt Rate was developed by staff based on the relative rates of the utilities and other pertinent information from various sources.

<sup>2</sup> The Older Electric Generation Technology Recommended Debt Rate is equal to the Modern Electric Generation Technology Recommended Debt Rate with an additional risk premium of 100 basis points (1.0%).

**2010 Capitalization Rate Study  
Electric Generation Facilities  
Summary of Rates of Return**

Common Equity		Bonds		
Facility Type	Rate of Return <sup>1</sup>	Moody's Bond Yields	Moody Rating	Rate of Return <sup>2</sup>
Modern Electric Generation Technology	14.00%	Aaa=NA	Aaa2	5.16%
			Aaa3	5.28%
			Aa1	5.41%
Older Electric Generation Technology	16.00%	Aa=5.54%	Aa2	5.54%
			Aa3	5.65%
			A1	5.75%
		A=5.86%	A2	5.86%
			A3	6.01%
			Baa1	6.16%
		Baa=6.31%	Baa2	6.31%
			Baa3	6.46%
			Ba1	6.61%
			Ba2	6.76%
			Ba3	6.91%
			B1	7.06%
			B2	7.21%
			B3	7.36%
			Caa1	7.51%

<sup>1</sup> The Rate of Return on Common Equity was developed by staff based on the relative risk of the utilities in conjunction with the results of the various financial models and pertinent information from various sources.

<sup>2</sup> Rates of Return on Bonds are based on Moody's "Utility Bond Yields" as of December 31, 2009. However, because Moody assigns a yield to the groups Aa, A and Baa for bonds, the staff interpolates the difference between these groups in order to achieve a further refinement of the ratings.

**2010 Capitalization Rate Study**  
**Electric Generation Facilities**  
**Comparison of Rates of Return on Common Equity**

	All Facilities in Study		
	2010	2009	Change
E/P Ratio-Mean	7.11%	9.71%	-2.60%
E/P Ratio-Median	7.74%	9.33%	-1.59%
Div Yld + Div Growth-Mean	3.74%	5.26%	-1.52%
Div Yld + Div Growth-Median	0.00%	4.11%	-4.11%
Div Yld + Div Growth-Weighted Avg.	6.51%	8.84%	-2.33%
Div Yld + Earn.Growth-Mean	7.64%	11.23%	-3.59%
Div Yld + Earn.Growth-Median	7.18%	11.63%	-4.45%
Div Yld + Earn.Growth-Weighted Avg.	8.45%	11.67%	-3.22%
Merrill Lynch Industry Factor - Required Return IPPs	14.80%	15.70%	-0.90%
ROE% - Yahoo Finance - Utilities	4.67%	11.90%	-7.23%
ROE% - Yahoo Finance - Electric Utilities	10.10%	11.20%	-1.10%
ROE% - Yahoo Finance - Diversified Utilities	13.20%	12.40%	0.80%

	Modern Technology	Older Technology
2009 Recommended Rate	15.00%	17.00%
CAPM - Ex Ante	10.02%	10.99%
CAPM - Ex Post	13.84%	15.49%
Risk Premium Analysis <sup>1</sup>	15.04%	16.06%
2010 Recommended Rate	14.00%	16.00%

<sup>1</sup> Risk Premium Analysis estimates the market indicated cost of equity by adding the appropriate "risk premium" to the corresponding cost of debt. "Risk Premium" of 6.6% is determined by comparing the Ibbotson total return on large company stocks to the total return on long-term corporate bonds.

**2010 Capitalization Rate Study**  
**Electric Generation Facilities**  
**Capital Asset Pricing Model - Ex Ante**

Component	Types of Facilities	
	Modern Technology	Older Technology
Expected Future Return, S&P 500	8.47%	8.47%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	4.60%	4.60%
Risk Premium	3.87%	3.87%
Beta <sup>2</sup>	1.40	1.65
Adjusted Risk Premium	5.42%	6.39%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	4.60%	4.60%
<b>Projected Return on Common Equity</b>	<b>10.02%</b>	<b>10.99%</b>

<sup>1</sup> WSJ.com on January 04, 2010

<sup>2</sup> The betas are based on staff's judgment in conjunction with the results of the Beta Analysis. See explanation contained in the Industry Notes.

**2010 Capitalization Rate Study**  
**Electric Generation Facilities**  
**Capital Asset Pricing Model - Ex Post**

Component	Types of Facilities	
	Modern Technology	Older Technology
Common Stock Return (1926 - 2009) <sup>1</sup>	11.80%	11.80%
Less: Income - Long Term Government Bonds <sup>1</sup>	5.20%	5.20%
Risk Premium	6.60%	6.60%
Beta <sup>2</sup>	1.40	1.65
Adjusted Risk Premium	9.24%	10.89%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>3</sup>	4.60%	4.60%
<b>Projected Return on Common Equity</b>	<b>13.84%</b>	<b>15.49%</b>

<sup>1</sup> Ibbotson Associates Study

<sup>2</sup> The betas are based on staff's judgment in conjunction with the results of the Beta Analysis. See explanation contained in the Industry Notes.

<sup>3</sup> WSJ.com on January 04, 2010

**2010 Capitalization Rate Study**  
**Electric Generation Facilities**  
**Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/09	Est. 2010 Earnings	2009 Earnings	2009 Dividends	Est. 2010 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
<u>Merchant Generators</u>												
B+	NRG Energy, Inc.	23.72	2.75	3.55	0.00%	0.00%	0.00%	0.00%	5.10%	11.59%	0.00%	5.10%
B	Mirant Corp.	15.22	1.46	3.35	0.00%	0.00%	0.00%	0.00%	7.00%	9.59%	0.00%	7.00%
C++	AES Corp.	13.35	1.15	1.10	0.00%	0.00%	0.00%	0.00%	8.50%	8.61%	0.00%	8.50%
C+	RRI Energy, Inc.	5.77	0.00	0.00	0.00%	0.00%	0.00%	0.00%	5.85%	0.00%	0.00%	5.85%
C+	Dynegy, Inc.	1.83	0.05	0.00	0.00%	0.00%	0.00%	0.00%	4.40%	2.73%	0.00%	4.40%
<u>Diversified Electric Utilities</u>												
A+	Exelon Corp.	49.07	3.80	4.30	2.10	2.10	4.28%	4.50%	2.90%	7.74%	8.78%	7.18%
A	Duke Energy Corp.	17.33	1.20	1.10	0.94	0.98	5.65%	0.00%	4.30%	6.92%	5.65%	9.95%
A	Sempra Energy	56.47	5.25	4.80	1.56	1.72	3.05%	8.50%	6.50%	9.30%	11.55%	9.55%
B++	Xcel Energy Inc.	21.32	1.60	1.50	0.97	1.00	4.69%	3.00%	6.50%	7.50%	7.69%	11.19%
	Mean						1.96%	1.78%	5.67%	7.11%	3.74%	7.64%
	Median						0.00%	0.00%	5.85%	7.74%	0.00%	7.18%
	Weighted Average										6.51%	8.45%
Merrill Lynch Required Return - Independent Power Producers												14.80%

Sources: Columns a, b, d, e, f, g and i were extracted from the Value Line Investment Survey Reports.  
Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.  
Column c was extracted from Zacks.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study  
Electric Generation Facilities  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
	<u>Merchant Generators</u>				
B+	NRG Energy, Inc.	2.00%	4.30%	9.00%	5.10%
B	Mirant Corp.	NMF	NMF	7.00%	7.00%
C++	AES Corp.	9.00%	NMF	8.00%	8.50%
C+	RRI Energy, Inc.	NMF	5.00%	6.70%	5.85%
C+	Dynegy, Inc.	NMF	5.00%	3.80%	4.40%
	<u>Diversified Electric Utilities</u>				
A+	Exelon Corp.	4.50%	2.00%	2.20%	2.90%
A	Duke Energy Corp.	5.00%	4.30%	3.60%	4.30%
A	Sempra Energy	5.50%	7.00%	7.00%	6.50%
B++	Xcel Energy Inc.	6.50%	5.70%	7.30%	6.50%
	Mean	5.42%	4.76%	6.07%	5.67%
	Median	5.25%	5.00%	7.00%	5.85%
	Weighted Average				5.24%
	Merrill Lynch 5 Year Growth Estimate - Independent Power Producers				1.70%



**2010 Capitalization Rate Study**  
**Electric Generation Facilities**  
**Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/09	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %	Debt Equity Ratio
<u>Merchant Generators</u>												
B+	NRG Energy, Inc.	256,409,300	23.72	6,082.03	8,229.00	406.00	6,082.03	14,717.03	55.91%	2.76%	41.33%	1.27
B	Mirant Corp.	143,510,087	15.22	2,184.22	2,592.00	0.00	2,184.22	4,776.22	54.27%	0.00%	45.73%	1.19
C++	AES Corp.	667,582,796	13.35	8,912.23	18,089.00	0.00	8,912.23	27,001.23	66.99%	0.00%	33.01%	2.03
C+	RRI Energy, Inc.	352,778,305	5.77	2,035.53	1,985.00	0.00	2,035.53	4,020.53	49.37%	0.00%	50.63%	0.98
C+	Dynegy, Inc.	845,561,433	1.83	1,547.38	5,928.00	0.00	1,547.38	7,475.38	79.30%	0.00%	20.70%	3.83
Mean									61.17%	0.55%	38.28%	1.86
Median									55.91%	0.00%	41.33%	1.27
Weighted Average									63.50%	0.34%	35.80%	1.93
<u>Diversified Electric Utilities</u>												
A+	Exelon Corp.	659,377,386	49.07	32,355.65	11,411.00	87.00	32,355.65	43,853.65	26.02%	0.20%	73.78%	0.35
A	Duke Energy Corp.	1,304,606,057	17.33	22,608.82	15,406.00	0.00	22,608.82	38,014.82	40.53%	0.00%	59.47%	0.68
A	Sempra Energy	245,337,795	56.47	13,854.23	6,723.00	179.00	13,854.23	20,756.23	32.39%	0.86%	66.75%	0.48
B++	Xcel Energy Inc.	455,725,244	21.32	9,716.06	8,055.60	105.00	9,716.06	17,876.66	45.06%	0.59%	54.35%	0.82
Mean									36.00%	0.41%	63.59%	0.58
Median									36.46%	0.39%	63.11%	0.58
Weighted Average									34.52%	0.31%	65.17%	0.55
Value Line Industry Survey Reports - Power Industry									56%	0%	44%	1.27
Value Line Industry Survey Reports - Electric Utility (West) Industry									53%	0%	47%	1.13
Fidelity.com Research Independent Power Producers & Energy Traders												1.59
Fidelity.com Research Electric Utilities												1.16

Sources: Columns a, b, c, f and g were extracted from the Value Line Investment Survey Reports.  
Column d was extracted from Zacks.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study**  
**Electric Generation Facilities**  
**Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
<u>Merchant Generators</u>								
B+	NRG Energy, Inc.	1.20	1.01	1.05	1.09	0.39	0.86	0.85
B	Mirant Corp.	1.05	1.17	1.25	1.16	0.00	1.01	1.25
C++	AES Corp.	1.20	1.47	1.53	1.40	0.30	1.80	0.79
C+	RRI Energy, Inc.	1.65	2.07	2.18	1.97	0.35	1.00	1.79
C+	Dynegy, Inc.	1.55	1.50	1.62	1.56	0.35	2.19	0.74
Mean		1.33	1.44	1.53	1.43	0.28	1.37	1.08
Median		1.20	1.47	1.53	1.40	0.35		0.85
Weighted					1.36	0.31		0.91
<u>Diversified Electric Utility</u>								
A+	Exelon Corp.	0.85	0.57	0.57	0.66	0.37	0.31	0.56
A	Duke Energy Corp.	0.65	0.43	0.38	0.49	0.35	0.57	0.36
A	Sempra Energy	0.85	0.58	0.61	0.68	0.30	0.39	0.55
B++	Xcel Energy Inc.	0.65	0.45	0.45	0.52	0.34	0.78	0.35
Mean		0.75	0.51	0.50	0.59	0.34	0.51	0.46
Median		0.75	0.51	0.51	0.59	0.35		0.46
Weighted					0.59	0.35		0.47
Merchant Generators Relevered Beta based on 45% Debt Capital Structure							1.35	<sup>3</sup>
Diversified Electric Utilities Relevered Beta based on 40% Debt Capital Structure							0.65	<sup>3</sup>
Merrill Lynch Adjusted Beta Independent Power Producers							1.40	

Sources: Columns a, b, c and g were extracted from the Value Line Investment Survey Reports.

Column d was extracted from Zacks.com.

Column e was extracted from Standard and Poor's Stock Reports.

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta = Corrected Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's 2009 tax rate.

<sup>3</sup> Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is a prospective purchaser's tax rate (assumed to be 40%).

**California State Board of Equalization**  
**State-Assessed Properties Division**  
**2010 Capitalization Rate Study**  
**Telecommunications Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
Local Exchange Companies								
279	Pacific Bell Telephone Company	A+	A2	70%	30%	12.57%	5.96%	10.58%
201	Verizon California, Inc.	A+	A3	70%	30%	12.57%	6.11%	10.63%
284	Citizens Telecommunications Co. of California, Inc.	B	Not Rated	65%	35%	12.83%	6.57%	10.64%
294	SureWest Telephone	C++	Not Rated	65%	35%	12.83%	6.57%	10.64%
	Other Local Exchange Companies	Not Rated	Not Rated	65%	35%	13.87%	6.72%	11.37%
Wireless Companies								
2606	AT&T Mobility LLC	A+	A2	70%	30%	12.04%	5.96%	10.22%
2532	Los Angeles SMSA Ltd., Partnership	A+	A3	70%	30%	12.04%	6.11%	10.26%
2552	Fresno MSA Limited Partnership	A+	A3	70%	30%	12.04%	6.11%	10.26%
2559	Cellco Partnership	A+	A3	70%	30%	12.04%	6.11%	10.26%
2748	OmniPoint Communications Inc.	B+	Not Rated	65%	35%	14.66%	6.72%	11.88%
2720	Sprint Telephony PCS, L.P.	C++	Not Rated	65%	35%	14.66%	7.03%	11.99%
2733	MetroPCS California, LLC	C++	Not Rated	65%	35%	14.66%	7.03%	11.99%
	Other Wireless Companies <sup>1</sup>	Not Rated	Not Rated	55%	45%	16.75%	8.50%	13.04%
	Wireless Reseller Companies	Not Rated	Not Rated	55%	45%	18.85%	9.01%	14.42%
Interexchange Companies								
2310	AT&T Communications, Inc.	A+	A2	70%	30%	13.35%	5.96%	11.13%
7885	AT&T Advanced Solutions	A+	A2	70%	30%	13.35%	5.96%	11.13%
2274	MCI Communications Services, Inc.	A+	A3	70%	30%	13.35%	6.11%	11.18%
2372	MCI Metro Access Transmission Services, LLC	A+	A3	70%	30%	13.35%	6.11%	11.18%
7522	tw telecom of california l.p.	B	Not Rated	65%	35%	14.14%	6.72%	11.54%
7761	Level 3 Communications, LLC	C++	Not Rated	60%	40%	16.23%	6.72%	12.43%
2014	Sprint Communications Co., L.P.	C++	Not Rated	60%	40%	16.23%	7.03%	12.55%
2463	Qwest Communications Corporation	C+	Not Rated	60%	40%	16.23%	7.03%	12.55%
	Other Interexchange Carriers	Not Rated	Not Rated	55%	45%	20.42%	8.50%	15.06%
	Other Interexchange Resellers	Not Rated	Not Rated	55%	45%	23.56%	9.01%	17.01%

<sup>1</sup> Includes Radio Telephone and Paging Companies

**2010 Capitalization Rate Study  
Telecommunications Companies  
Industry Notes**

- Staff conducted a consolidated capitalization rate study for the local exchange, wireless, and interexchange industries due to the increasing convergence of these three industries. Separate capitalization rates were derived for the companies in each of the three industries based on the relative risk experienced by each group of companies within their respective industries.
- Staff relied on the Discounted Cash Flow Model (DCF) and Capital Asset Pricing Model (CAPM ex post and ex ante) in the development of equity rates.
- D&E Communications was removed from the study as it was acquired by Windstream Communications.
- Embarq Corporation was removed from the study as it was acquired by CenturyTel, Inc.
- FairPoint Communications was removed from the study as the company filed for bankruptcy in 2009, leaving no meaningful data.

**2010 Capitalization Rate Study**  
**Telecommunications Companies - Local Exchange**  
**Flotation Cost Adjustment**

<b>Equity</b>				<b>Debt</b>			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A+	12.00%	4.50%	12.57%	Aa2	5.54%	1.70%	5.64%
B++, B+, B	12.25%	4.50%	12.83%	Aa3	5.65%	1.70%	5.74%
C++, C+, C	13.25%	4.50%	13.87%	A1	5.75%	1.70%	5.85%
Other Local Exchange Companies	13.25%	4.50%	13.87%	A2	5.86%	1.70%	5.96%
				A3	6.01%	1.70%	6.11%
				Baa1	6.16%	1.70%	6.27%
				Baa2	6.31%	1.70%	6.42%
				Baa3	6.46%	1.70%	6.57%
				Not Rated	6.61%	1.70%	6.72%

Cost of Capital Adjusted for Flotation Costs =

$$\frac{k_u}{1 - f}$$

Where:

$k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

**2010 Capitalization Rate Study  
Telecommunications Companies - Wireless  
Flotation Cost Adjustment**

<b>Equity</b>				<b>Debt</b>			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A+	11.50%	4.50%	12.04%	Aa2	5.54%	1.70%	5.64%
B++, B+, B	12.50%	4.50%	13.09%	Aa3	5.65%	1.70%	5.74%
C++, C+, C	14.00%	4.50%	14.66%	A1	5.75%	1.70%	5.85%
Other Wireless Companies <sup>1</sup>	16.00%	4.50%	16.75%	A2	5.86%	1.70%	5.96%
Wireless Reseller Companies	18.00%	4.50%	18.85%	A3	6.01%	1.70%	6.11%
				Baa1	6.16%	1.70%	6.27%
				Baa2	6.31%	1.70%	6.42%
				Baa3	6.46%	1.70%	6.57%
				Ba1	6.61%	1.70%	6.72%
				Ba2	6.76%	1.70%	6.88%
				Ba3	6.91%	1.70%	7.03%
				B1	7.06%	1.70%	7.18%
				B2	7.21%	1.70%	7.33%
				B3	7.36%	1.70%	7.49%
				Not Rated	8.36%	1.70%	8.50%
				Not Rated	8.86%	1.70%	9.01%

Cost of Capital Adjusted for Flotation Costs = 
$$\frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs  
 $f$  = Flotation cost as a percentage of the value of securities issued

<sup>1</sup> Includes Radio Telephone and Paging Companies

**2010 Capitalization Rate Study  
Telecommunications Companies - Interexchange  
Flotation Cost Adjustment**

<b>Equity</b>				<b>Debt</b>			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A+	12.75%	4.50%	13.35%	Aa2	5.54%	1.70%	5.64%
B++, B+, B	13.50%	4.50%	14.14%	Aa3	5.65%	1.70%	5.74%
C++, C+, C	15.50%	4.50%	16.23%	A1	5.75%	1.70%	5.85%
Other Interexchange Carriers	19.50%	4.50%	20.42%	A2	5.86%	1.70%	5.96%
Other Interexchange Resellers	22.50%	4.50%	23.56%	A3	6.01%	1.70%	6.11%
				Baa1	6.16%	1.70%	6.27%
				Baa2	6.31%	1.70%	6.42%
				Baa3	6.46%	1.70%	6.57%
				Ba1	6.61%	1.70%	6.72%
				Ba2	6.76%	1.70%	6.88%
				Ba3	6.91%	1.70%	7.03%
				B1	7.06%	1.70%	7.18%
				B2	7.21%	1.70%	7.33%
				B3	7.36%	1.70%	7.49%
				Not Rated	8.36%	1.70%	8.50%
				Not Rated	8.86%	1.70%	9.01%

Cost of Capital Adjusted for Flotation Costs =

$$\frac{k_u}{1 - f}$$

Where:

$k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

**2010 Capitalization Rate Study**  
**Telecommunications Companies**  
**Comparison of Return on Common Equity**

Description	A+			B++, B+, B			C++, C+, C		
	2010	2009	Change	2010	2009	Change	2010	2009	Change
<b>Discounted Cash Flow Analysis</b>									
E/P Ratio - Mean	7.96%	9.25%	-1.28%	7.26%	9.19%	-1.93%	5.23%	7.96%	-2.73%
E/P Ratio - Median	7.96%	9.25%	-1.28%	8.64%	8.01%	0.64%	4.86%	7.96%	-3.09%
Dividend Yield + Dividend Growth - Mean	9.86%	11.84%	-1.98%	11.73%	11.41%	0.31%	7.61%	12.42%	-4.81%
Dividend Yield + Dividend Growth - Median	9.86%	11.84%	-1.98%	9.67%	10.87%	-1.20%	7.60%	12.42%	-4.82%
Weighted Average (Div. Yield + Div. Growth)	10.20%	13.24%	-3.04%	9.30%	14.57%	-5.27%	7.53%	9.23%	-1.70%
Dividend Yield + Earnings Growth - Mean	10.98%	14.69%	-3.71%	11.76%	13.22%	-1.46%	11.44%	16.19%	-4.75%
Dividend Yield + Earnings Growth - Median	10.98%	14.69%	-3.71%	10.17%	14.55%	-4.37%	11.13%	16.19%	-5.06%
Weighted Average (Div. Yield + Earn. Growth)	11.11%	15.36%	-4.26%	10.67%	12.95%	-2.28%	8.39%	16.75%	-8.36%
<b>CAPM Analysis</b>									
Ex Ante	7.31%	8.73%	-1.43%	7.89%	9.09%	-1.20%	8.47%	10.15%	-1.68%
Ex Post	9.22%	8.27%	0.95%	10.21%	8.60%	1.61%	11.20%	9.57%	1.63%
<b>Recommended Rates</b>									
Local Exchange	12.00%	12.25%	-0.25%	12.25%	12.75%	-0.50%	13.25%	14.00%	-0.75%
Wireless	11.50%	12.25%	-0.75%	12.50%	13.25%	-0.75%	14.00%	14.75%	-0.75%
Interexchange	12.75%	13.50%	-0.75%	13.50%	14.25%	-0.75%	15.50%	16.25%	-0.75%



**2010 Capitalization Rate Study  
Telecommunications Companies  
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/09	Est. 2010 Earnings	2009 Earnings	2009 Dividends	Est. 2010 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DivYld+ DivGrw (h+i)	DivYld+ ErngsGrw (h+j)
A+	AT&T Inc.	28.03	2.35	2.13	1.64	1.68	5.99%	5.50%	5.60%	8.38%	11.49%	11.59%
A+	Verizon Communications	33.13	2.50	2.45	1.84	1.90	5.73%	2.50%	4.63%	7.55%	8.23%	10.37%
	Mean						5.86%	4.00%	5.12%	7.96%	9.86%	10.98%
	Median						5.86%	4.00%	5.12%	7.96%	9.86%	10.98%
	Weighted Average										10.20%	11.11%
B++	CenturyTel Inc.	36.21	3.55	3.40	2.80	2.80	7.73%	NMF	1.40%	9.80%	7.73%	9.13%
B++	Shenandoah Telecom	20.35	1.15	1.08	0.32	0.34	1.67%	8.50%	8.50%	5.65%	10.17%	10.17%
B	Frontier Communications	7.81	0.70	0.55	1.00	1.00	12.80%	NMF	1.77%	8.96%	12.80%	14.57%
B	Iowa Telecom. Services	16.76	0.65	0.52	1.62	1.62	9.67%	NMF	0.00%	3.88%	9.67%	9.67%
B	Ntelos Holdings	17.81	1.55	1.50	1.04	1.12	6.29%	21.00%	14.00%	8.70%	27.29%	20.29%
B	Telephone&Data Systems	33.92	1.75	1.80	0.43	0.45	1.33%	4.00%	6.00%	5.16%	5.33%	7.33%
B	Windstream Corp.	10.99	0.95	0.80	1.00	1.00	9.10%	NMF	2.10%	8.64%	9.10%	11.20%
	Mean						6.94%	11.17%	4.82%	7.26%	11.73%	11.76%
	Median						7.73%	8.50%	2.10%	8.64%	9.67%	10.17%
	Weighted Average										9.30%	10.67%

**2010 Capitalization Rate Study  
Telecommunications Companies  
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/09	Est. 2010 Earnings	2009 Earnings	2009 Dividends	Est. 2010 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DivYld+ DivGrw (h+i)	DivYld+ ErngsGrw (h+j)
C++	Consolidated Communications	17.48	0.85	0.80	1.55	0.78	4.46%	NMF	6.67%	4.86%	4.46%	11.13%
C+	Alaska Communications Sys	7.98	0.20	0.08	0.86	0.86	10.78%	NMF	4.50%	2.51%	10.78%	15.28%
C+	Qwest Communications Int'l.	4.21	0.35	0.40	0.32	0.32	7.60%	NMF	0.30%	8.31%	7.60%	7.90%
	Mean						7.61%	NMF	3.82%	5.23%	7.61%	11.44%
	Median						7.60%	NMF	4.50%	4.86%	7.60%	11.13%
	Weighted Average										7.53%	8.39%

Sources: Columns a, d, e, f, g, i were extracted from the December 25, 2009 Value Line.

Column c represents closing stock prices as of December 31, 2009, downloaded from CNN Money.

Column j was extracted from the long term earnings growth page of the 2010 capitalization rate study for telecommunications companies.

**2010 Capitalization Rate Study  
Telecommunications Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A+	AT&T Inc.	5.00%	5.90%	5.90%	5.60%
A+	Verizon Communications	4.00%	5.30%	4.60%	4.63%
	Mean	4.50%	5.60%	5.25%	5.12%
	Median	4.50%	5.60%	5.25%	5.12%
	Weighted Average				5.22%
B++	CenturyTel Inc.	2.50%	1.80%	-0.10%	1.40%
B++	Shenandoah Telecom.	9.00%	8.00%	NMF	8.50%
B++	Warwick Valley Telephone Company	11.00%	NMF	NMF	11.00%
B+	U.S. Cellular	4.00%	2.00%	6.50%	4.17%
B	Frontier Communications	5.00%	2.70%	-2.40%	1.77%
B	Iowa Telecom. Services	-6.00%	3.00%	3.00%	0.00%
B	Ntelos Holdings	NMF	13.50%	14.50%	14.00%
B	Telephone&Data Systems	2.00%	NMF	10.00%	6.00%
B	tw telecom, inc.	6.50%	23.60%	27.50%	19.20%
B	Windstream Corp.	2.50%	1.80%	2.00%	2.10%
	Mean	4.06%	7.05%	7.63%	6.81%
	Median	4.00%	2.85%	4.75%	5.08%
	Weighted Average				3.99%

**2010 Capitalization Rate Study  
Telecommunications Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
C++	Consolidated Communications	16.50%	2.00%	1.50%	6.67%
C++	General Communication	NMF	16.00%	16.00%	16.00%
C++	Leap Wireless	NMF	NMF	18.00%	18.00%
C++	Level 3 Communications	NMF	4.50%	-1.50%	1.50%
C++	MetroPCS Communications	29.50%	26.00%	20.00%	25.17%
C++	Sprint Nextel	NMF	4.70%	-0.80%	1.95%
C+	Alaska Communications Systems	4.50%	NMF	NMF	4.50%
C+	Cincinnati Bell	6.00%	3.50%	2.00%	3.83%
C+	Qwest Communications Int'l.	NMF	0.80%	-0.20%	0.30%
	Mean	14.13%	8.21%	6.88%	8.66%
	Median	11.25%	4.50%	1.75%	4.50%
	Weighted Average				4.60%

Sources: Columns a, c were extracted from the December 25, 2009 Value Line.  
Column d was extracted from Zacks.com on December 31, 2009.  
Column e was extracted from ThomsonReuters.com on December 28, 2009.

**2010 Capitalization Rate Study  
Telecommunications Companies  
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/09	Market Value Equity (\$million)	Long Term Debt (\$million)	Preferred Stock (\$million)	Common Stock (\$million)	Total Capital (\$million)	L.T. Debt %	Preferred Stock %	Common Stock %
A+	AT&T Inc.	5,901,000,000	28.03	165,405.03	65,909.00	0.00	165,405.03	231,314.03	28.49%	0.00%	71.51%
A+	Verizon Communications	2,840,648,086	33.13	94,110.67	57,374.00	0.00	94,110.67	151,484.67	37.87%	0.00%	62.13%
	Mean								33.18%	0.00%	66.82%
	Median								33.18%	0.00%	66.82%
	Weighted Average								32.21%	0.00%	67.79%
B++	CenturyTel Inc.	297,500,000	36.21	10,772.48	7,454.50	0.00	10,772.48	18,226.98	40.90%	0.00%	59.10%
B++	Shenandoah Telecom.	23,640,510	20.35	481.08	22.70	0.00	481.08	503.78	4.51%	0.00%	95.49%
B++	Warwick Valley	5,358,112	13.09	70.14	3.00	0.00	70.14	73.14	4.10%	0.00%	95.90%
B+	U.S. Cellular	86,742,979	42.41	3,678.77	997.60	0.00	3,678.77	4,676.37	21.33%	0.00%	78.67%
B	Frontier Communications	312,327,757	7.81	2,439.28	4,897.50	0.00	2,439.28	7,336.78	66.75%	0.00%	33.25%
B	Iowa Telecom. Services	32,806,162	16.76	549.83	566.90	0.00	549.83	1,116.73	50.76%	0.00%	49.24%
B	Ntelos Holdings	42,294,605	17.81	753.27	623.50	0.00	753.27	1,376.77	45.29%	0.00%	54.71%
B	Telephone&Data Systems	106,493,443	33.92	3,612.26	1,621.00	0.90	3,612.26	5,234.16	30.97%	0.02%	69.01%
B	tw telecom, inc.	149,440,000	17.15	2,562.90	1,297.80	0.00	2,562.90	3,860.70	33.62%	0.00%	66.38%
B	Windstream Corp.	427,390,506	10.99	4,697.02	5,199.00	0.00	4,697.02	9,896.02	52.54%	0.00%	47.46%
	Mean								35.08%	0.00%	64.92%
	Median								37.26%	0.00%	62.74%
	Weighted Average								43.37%	0.00%	56.63%

**2010 Capitalization Rate Study  
Telecommunications Companies  
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/09	Market Value Equity (\$million)	Long Term Debt (\$million)	Preferred Stock (\$million)	Common Stock (\$million)	Total Capital (\$million)	L.T. Debt %	Preferred Stock %	Common Stock %
C++	Consolidated Communications	29,642,228	17.48	518.15	880.00	0.00	518.15	1,398.15	62.94%	0.00%	37.06%
C++	General Communication	54,804,000	6.38	349.65	824.70	0.00	349.65	1,174.35	70.23%	0.00%	29.77%
C++	Leap Wireless	77,402,588	17.55	1,358.42	2,752.80	0.00	1,358.42	4,111.22	66.96%	0.00%	33.04%
C++	Level 3 Communications	1,639,775,248	1.53	2,508.86	6,100.00	0.00	2,508.86	8,608.86	70.86%	0.00%	29.14%
C++	MetroPCS Communications	352,400,702	7.63	2,688.82	3,590.70	0.00	2,688.82	6,279.52	57.18%	0.00%	42.82%
C++	Sprint Nextel	2,877,068,614	3.66	10,530.07	20,892.00	0.00	10,530.07	31,422.07	66.49%	0.00%	33.51%
C++	SureWest Communications	14,169,000	9.96	141.12	211.00	0.00	141.12	352.12	59.92%	0.00%	40.08%
C+	Alaska Comm. Systems	44,395,067	7.98	354.27	537.20	0.00	354.27	891.47	60.26%	0.00%	39.74%
C+	Cincinnati Bell	202,977,035	3.45	700.27	1,932.20	129.40	700.27	2,761.87	69.96%	4.69%	25.35%
C+	Qwest Communications Int'l.	1,726,624,162	4.21	7,269.09	13,210.00	0.00	7,269.09	20,479.09	64.50%	0.00%	35.50%
	Mean								64.93%	0.47%	34.60%
	Median								65.50%	0.00%	34.50%
	Weighted Average								65.73%	0.17%	34.10%

Sources: Columns a, c, f, g were extracted from the December 25, 2009 Value Line.

Column d represents closing stock prices as of December 31, 2009, downloaded from CNN Money.

**2010 Capitalization Rate Study  
Telecommunications Companies  
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Rating		
	A+	B++, B+, B	C++, C+, C
Expected Future Return, S&P 500	8.47%	8.47%	8.47%
Less: Risk Free Return, 25-30 Year Treasury Bonds <sup>1</sup>	4.60%	4.60%	4.60%
Ex Ante Risk Premium	3.87%	3.87%	3.87%
Relevered Beta <sup>2</sup>	0.70	0.85	1.00
Adjusted Risk Premium	2.71%	3.29%	3.87%
Risk Free Return, 25-30 Year Treasury Bonds <sup>1</sup>	4.60%	4.60%	4.60%
<b>Projected Equity Yield</b>	<b>7.31%</b>	<b>7.89%</b>	<b>8.47%</b>

<sup>1</sup> WSJ.com on January 4, 2010

<sup>2</sup> The estimated betas were derived from a representative sample of telecommunications companies with similar ratings.

**2010 Capitalization Rate Study  
Telecommunications Companies  
Capital Asset Pricing Model - Ex Post**

Component	Value Line Rating		
	A+	B++, B+, B	C++, C+, C
Common Stock Return (1926-2009) <sup>1</sup>	11.80%	11.80%	11.80%
Less: Income - Long Term Government Bonds (1926-2009) <sup>1</sup>	5.20%	5.20%	5.20%
Ex Post Risk Premium	6.60%	6.60%	6.60%
Relevered Beta <sup>2</sup>	0.70	0.85	1.00
Adjusted Risk Premium	4.62%	5.61%	6.60%
Risk Free Return, 25-30 Year Treasury Bonds <sup>3</sup>	4.60%	4.60%	4.60%
<b>Projected Equity Yield</b>	<b>9.22%</b>	<b>10.21%</b>	<b>11.20%</b>

<sup>1</sup> 2010 Ibbotson Associates Study

<sup>2</sup> The estimated betas were derived from a representative sample of telecommunications companies with similar ratings.

<sup>3</sup> WSJ.com on January 4, 2010.



**2010 Capitalization Rate Study  
Telecommunications Companies  
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Thomson Beta	Average Beta	Company Tax Rate	Debt Equity Ratio	Unlevered Beta <sup>1</sup>
A+	AT&T Inc.	0.75	0.68	0.63	0.69	0.34	0.28	0.58
A+	Verizon Communications	0.70	0.60	0.56	0.62	0.35	0.38	0.50
	Mean	0.73	0.64	0.60	0.65		0.33	0.54
	Median	0.73	0.64	0.60	0.65		0.33	0.54
	Weighted Average				0.66		0.32	0.55
B++	CenturyTel Inc.	0.75	0.84	0.59	0.73	0.38	0.71	0.50
B++	Shenandoah Telecom.	0.80	0.33	1.62	0.92	0.42	0.03	0.90
B++	Warwick Valley	0.50	0.78	0.14	0.47	0.34	0.08	0.45
B+	U.S. Cellular	1.10	0.87	0.99	0.99	0.40	0.23	0.87
B	Frontier Communications	0.95	0.87	0.89	0.90	0.38	1.34	0.49
B	Iowa Telecom. Services	0.75	0.63	0.62	0.67	0.42	0.96	0.43
B	Ntelos Holdings	0.85	0.86	0.82	0.84	0.40	0.68	0.60
B	Telephone&Data Systems	0.80	0.60	0.91	0.77	0.34	0.50	0.58
B	tw telecom, inc.	1.45	1.65	1.08	1.39	0.20	0.73	0.88
B	Windstream Corp.	0.95	0.97	0.74	0.89	0.39	1.03	0.54
	Mean	0.89	0.84	0.84	0.86		0.63	0.62
	Median	0.83	0.85	0.86	0.87		0.70	0.56
	Weighted Average				0.86		0.80	0.58

<sup>1</sup> Unlevered Beta = Average Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate

**2010 Capitalization Rate Study  
Telecommunications Companies  
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Thomson Beta	Average Beta	Company Tax Rate	Debt Equity Ratio	Unlevered Beta <sup>1</sup>
C++	Consolidated Communications	0.95	1.16	1.03	1.05	0.40	1.57	0.54
C++	General Communication	1.15	1.16	1.97	1.43	0.47	1.36	0.83
C++	Leap Wireless	1.30	1.48	0.84	1.21	0.38	0.91	0.77
C++	MetroPCS	0.85	0.16	0.80	0.60	0.35	0.78	0.40
C++	Sprint Nextel	1.35	1.20	1.27	1.27	0.33	1.46	0.64
C++	SureWest Communications	0.80	N/A	0.91	0.86	0.41	0.61	0.63
C+	Alaska Comm. Systems	0.80	0.78	0.99	0.86	0.44	1.06	0.54
C+	Cincinnati Bell	1.05	1.59	0.99	1.21	0.45	2.74	0.48
C+	Qwest Communications Int'l.	1.05	0.86	0.65	0.85	0.37	1.46	0.44
	Mean	1.03	1.05	1.05	1.04		1.33	0.59
	Median	1.05	1.16	0.99	1.05		1.36	0.54
	Weighted Average				1.07		1.41	0.56

	A+	B++, B+, B	C++, C+, C
A+: Relevered beta based on 30% debt capital structure	0.68 <sup>2</sup>	----	----
Relevered beta based on 30% debt capital structure and a weighted average beta	0.69 <sup>2</sup>	----	----
B++, B+, B: Relevered beta based on 35% debt capital structure	----	0.83 <sup>2</sup>	----
Relevered beta based on 35% debt capital structure and a weighted average beta	----	0.77 <sup>2</sup>	----
C++, C+, C: Relevered beta based on 40% debt capital structure	----	----	0.82 <sup>2</sup>
Relevered beta based on 40% debt capital structure and a weighted average beta	----	----	0.79 <sup>2</sup>

Sources: Columns a, c, g were extracted from December 25, 2009 Value Line.

Column d was extracted from Zacks.com on December 31, 2009.

Column e was extracted from ThomsonReuters.com on December 28, 2009.

Column h is a 5-year average calculated per data extracted from the capitalization rate studies for lien dates 2005-2009, December 25, 2009 Value Line, and Finance.Yahoo.com.

<sup>1</sup> Unlevered Beta = Average Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate

<sup>2</sup> Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%)

**California State Board of Equalization  
State-Assessed Properties Division  
2010 Capitalization Rate Study  
Pipeline Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Equity	Debt	
<b>402</b>	<b>CALNEV Pipe Line LLC</b>	NR-1	NR-b	65%	35%	13.09%	6.50%	10.78%
<b>461</b>	<b>SFPP, L.P.</b>	NR-1	NR-b	65%	35%	13.09%	6.50%	10.78%
<b>468</b>	<b>Shell California Pipeline Company LLC</b>	NR-2	NR-b	65%	35%	13.61%	6.50%	11.12%
<b>479</b>	<b>Chevron Pipeline Company</b>	NR-2	NR-b	65%	35%	13.61%	6.50%	11.12%
<b>480</b>	<b>ConocoPhillips Pipe Line Company</b>	NR-2	NR-b	65%	35%	13.61%	6.50%	11.12%
<b>486</b>	<b>Pacific Pipeline System, LLC</b>	NR-2	NR-b	65%	35%	13.61%	6.50%	11.12%
	<b>Other Pipeline Companies</b>	NR-3	NR-c	65%	35%	14.66%	7.52%	12.16%

**2010 Capitalization Rate Study  
Pipeline Companies  
Industry Notes**

- Staff relied primarily on the Discounted Cash Flow model in the development of equity rates.

**2010 Capitalization Rate Study  
Pipeline Companies  
Flotation Cost Adjustment**

<b>Equity</b>				<b>Debt</b>			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
NR-1	12.50%	4.50%	13.09%	NR-b	6.39%	1.70%	6.50%
NR-2	13.00%	4.50%	13.61%	NR-c	7.39%	1.70%	7.52%
NR-3	14.00%	4.50%	14.66%				

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

NR-1: Not-Rated-1 pipelines are not directly traded because they are subsidiaries of larger companies. These are larger common carrier pipelines transmitting refined petroleum products.

NR-2: Not-Rated-2 pipelines are not directly traded because they are subsidiaries of larger companies. These are larger common carrier pipelines transmitting crude oil.

NR-3: Not-Rated-3 pipelines are smaller companies transporting petroleum products or crude oil.

NR-b: Although these companies do not have rated debt securities, the rating class "Baa" was chosen to represent these subsidiaries of larger corporations.

NR-c: Issues of this size are not normally rated. An additional increment of 100 basis points (before flotation costs) has been added to the "Baa" rate.

**2010 Capitalization Rate Study  
Pipeline Companies  
Comparison of Return on Common Equity**

Description	2010	2009	Change
E/P Ratio - Mean	4.65%	9.42%	-4.77%
E/P Ratio - Median	5.01%	9.93%	-4.92%
Dividend Yield + Dividend Growth - Mean	12.49%	17.96%	-5.47%
Dividend Yield + Dividend Growth - Median	13.07%	17.43%	-4.36%
Dividend Yield + Earnings Growth - Mean	12.43%	19.38%	-6.95%
Dividend Yield + Earnings Growth - Median	12.14%	18.71%	-6.57%
Capital Asset Pricing Model (CAPM) - Ex Ante	6.84%	6.68%	0.16%
Capital Asset Pricing Model (CAPM) - Ex Post	8.42%	6.39%	2.03%

2010 recommended equity rates:

**12.50%** for Common Carrier product lines

**13.00%** for Common Carrier crude oil lines

**14.00%** for all other pipelines

**2010 Capitalization Rate Study**  
**Pipeline Companies**  
**Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line		Stock				2010	2010	2010	E/P	Div Yld+	Div Yld+
Rating	Company Name	Price	2009	2009	2010	Dividend	Hist. Div	Avg. Erns	Ratio	Div Gwth	Erns Gwth
		12/31/09	Earnings	Dividends	Est Div	Yield	Growth	Growth	(d/c)	(g+h)	(g+i)
B+	Buckeye Partners, L.P.	54.51	3.45	3.63	3.77	6.92%	4.00%	6.50%	6.33%	10.92%	13.42%
B++	Enbridge Energy Partners, L.P.	53.59	2.73	3.96	2.96	5.52%	1.00%	4.53%	5.09%	6.52%	10.06%
B+	Enterprise Product Partners, L. P.	31.51	1.55	2.17	2.30	7.30%	10.00%	3.57%	4.92%	17.30%	10.87%
B+	Kinder Morgan Energy Partners, L.P.	60.83	1.37	4.20	4.40	7.23%	8.00%	8.17%	2.25%	15.23%	15.40%
		Mean					5.75%	5.69%	4.65%	12.49%	12.43%
		Median					6.00%	5.52%	5.01%	13.07%	12.14%
		Weighted Average									12.69%

Sources: Columns a, d, e, f and h were extracted from the Value Line Investment Survey Reports.

Column c was extracted from the Finance.Yahoo.com and represents December 31, 2009 closing stock prices.

Column i is an average of Value Line, Zacks.com, and ThomsonReuters.com.

**2010 Capitalization Rate Study**  
**Pipeline Companies**  
**Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
B+	Buckeye Partners, L.P.	6.50%	3.30%	3.80%	4.53%
B++	Enbridge Energy Partners, L.P.	15.00%	2.50%	2.00%	6.50%
B+	Enterprise Product Partners, L. P.	12.00%	6.70%	5.80%	8.17%
B+	Kinder Morgan Energy Partners, L.P.	4.00%	3.70%	3.00%	3.57%
	Mean	9.38%	4.05%	3.65%	5.69%
	Median	9.25%	3.50%	3.40%	5.52%
	Weighted Average				5.89%



**2010 Capitalization Rate Study**  
**Pipeline Companies**  
**Capital Asset Pricing Model - Ex Ante**

Component	Industry Computation
Expected Future Return, S&P 500	8.47%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	4.60%
Risk Premium	3.87%
Beta <sup>2</sup>	0.58
Adjusted Risk Premium	2.24%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	4.60%
Projected Return on Common Equity	<b>6.84%</b>

<sup>1</sup> WSJ.com on January 4, 2010

<sup>2</sup> Weighted average using betas from Value Line, Zacks.com, and Standard & Poor's for a representative sample of pipeline companies.

**2010 Capitalization Rate Study**  
**Pipeline Companies**  
**Capital Asset Pricing Model - Ex Post**

Component	Industry Computation
Common Stock Return (1926 - 2009) <sup>1</sup>	11.80%
Less: Income - Long Term Government Bonds <sup>1</sup>	5.20%
Risk Premium	6.60%
Beta <sup>2</sup>	0.58
Adjusted Risk Premium	3.82%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>3</sup>	4.60%
Projected Return on Common Equity	<b>8.42%</b>

<sup>1</sup> Ibbotson Associates Study

<sup>2</sup> Weighted average using betas from Value Line, Zacks.com, and Standard & Poor's for a representative sample of pipeline companies.

<sup>3</sup> WSJ.com on January 4, 2010

**2010 Capitalization Rate Study**  
**Pipeline Companies**  
**Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line		Value Line	Zacks	Standard & Poor's	Average	Tax	Debt Equity	Unlevered
Rating	Company Name	Beta	Beta	Beta	Beta	Rate	Ratio	Beta <sup>1</sup>
B+	Buckeye Partners, L.P.	0.85	0.18	0.16	0.40	0.40	0.51	0.30
B++	Enbridge Energy Partners, L.P.	0.95	0.70	0.71	0.79	0.40	0.63	0.57
B+	Enterprise Product Partners, L. P.	0.85	0.49	0.50	0.61	0.40	0.48	0.48
B+	Kinder Morgan Energy Partners, L.P.	0.75	0.25	N/A	0.50	0.40	0.58	0.37
	Mean	0.85	0.41	0.46	0.57	0.40	0.55	0.43
	Median	0.85	0.37	0.50	0.56	0.40	0.55	0.42
	Weighted Average				0.58		0.55	0.44
	Relevered beta based on 35% Debt Capital Structure							0.57 <sup>2</sup>
	Relevered beta based on 35% Debt Capital Structure and a weighted average beta							0.58 <sup>2</sup>

<sup>1</sup> Unlevered Beta = Beta/[1+(1-t)(D/E)]; where D/E is the debt to equity ratio, t is the tax rate (assumed to be 40%)

<sup>2</sup> Relevered Beta = [Unlevered Beta][1+(1-t)(D/E)]; where D/E is the debt to equity ratio, t is the tax rate (assumed to be 40%)

**2010 Capitalization Rate Study**  
**Pipeline Companies**  
**Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Moody Bond Rating	Company Name	Partnership Units Outstanding (000)	Unit Price 12/31/09	Market Value Equity (000)	Market Value Preferred (000)	Long Term Debt (000)	Total Capital (000)	Long Term Debt %	Preferred %	Equity %
B+	NR	Buckeye Partners, L.P.	51,410	54.51	2,802,359	0	1,420,900	4,223,259	33.64%	0.00%	66.36%
B++	NR	Enbridge Energy Partners, L.P.	117,388	53.59	6,290,801	0	3,983,200	10,274,001	38.77%	0.00%	61.23%
B+	NR	Enterprise Product Partners, L. P.	601,918	31.51	18,966,446	0	9,198,300	28,164,746	32.66%	0.00%	67.34%
B+	NR	Kinder Morgan Energy Partners, L.P.	288,945	60.83	17,576,506	0	10,247,400	27,823,906	36.83%	0.00%	63.17%
		Total			45,636,112	0	24,849,800	70,485,912			
		Mean							35.48%	0.00%	64.52%
		Median							35.24%	0.00%	64.76%
		Weighted Average							35.25%	0.00%	64.75%

Recommended Capital Structure for Common Carrier Pipelines for lien date January 1, 2010:

Debt	-	35%
Equity	-	65%

Sources: . Columns a, d, g and h were extracted from the Value Line Investment Survey Reports  
Column e was extracted from the Finance.Yahoo.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study**  
**Pipeline Companies**  
**Debt Yield Rate**

Average of Industrial and Public Utility Bond Yield:

Aa	Industrial/Utility Average	5.49%	
A	Industrial/Utility Average	5.84%	
		5.49%	Aa
		5.84%	A
Baa	Industrial/Utility Average	6.39%	
	Recommended	6.39%	Baa/Ba

Bond Rating	Industrial	Public Utility	Average
Aaa	5.33%	N/A	5.33%
Aa	5.44%	5.54%	5.49%
A	5.82%	5.86%	5.84%
Baa	6.47%	6.31%	6.39%

Source: Moody's Public Utility, Credit Market Trends Service.

**California State Board of Equalization  
State-Assessed Properties Division  
2010 Capitalization Rate Study  
Railroads**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
<b>804</b>	<b>BNSF Railway Company</b>	A	Baa2	75%	25%	13.61%	6.50%	<b>11.83%</b>
<b>843</b>	<b>Union Pacific Railroad Company</b>	A	Baa2	75%	25%	13.61%	6.50%	<b>11.83%</b>
<b>802</b>	<b>Central Oregon &amp; Pacific Railroad</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>810</b>	<b>California Northern Railroad</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>813</b>	<b>Pacific Harbor Lines</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>850</b>	<b>Modesto &amp; Empire Traction Company</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>865</b>	<b>San Diego &amp; Imperial Valley Railroad Co. Inc.</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>882</b>	<b>Trona Railway Co.</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>897</b>	<b>San Joaquin Valley Railroad Company</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
<b>899</b>	<b>Arizona &amp; California Railroad</b>	NR-1	NR-1	60%	40%	15.71%	8.03%	<b>12.63%</b>
	<b>Other Railroad Companies</b>	NR-2	NR-2	60%	40%	15.97%	9.04%	<b>13.20%</b>

**2010 Capitalization Rate Study  
Railroad Companies  
Industry Notes**

- Staff relied upon the results of the following models in the development of equity rates:
  1. Discounted Cash Flow
  2. Capital Asset Pricing Model (Ex Post and Ex Ante)

**2010 Capitalization Rate Study  
Railroad Companies  
Flotation Cost Adjustment**

<b>Equity</b>				<b>Debt</b>			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
B++, B+	13.00%	4.50%	13.61%	Baa2	6.39%	1.70%	6.50%
NR-1	15.00%	4.50%	15.71%	NR-1 <sup>1</sup>	7.89%	1.70%	8.03%
NR-2	15.25%	4.50%	15.97%	NR-2 <sup>2</sup>	8.89%	1.70%	9.04%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

<sup>1</sup> NR-1: Represent short line railroad companies with stable historical income. An additional 150 basis points (1.5%) were added to the Baa2 bond rate to represent the additional risk premium.

<sup>2</sup> NR-2: Represent short line railroad companies without stable historical income patterns. An additional 250 basis points (2.5%) were added to the Baa2 bond rate to represent the additional risk premium.



**2010 Capitalization Rate Study**  
**Railroad Companies**  
**Comparison of Return on Common Equity**

Description	2010	2009	Change
E/P Ratio - Mean	6.20%	10.53%	-4.33%
E/P Ratio - Median	6.29%	10.58%	-4.29%
Dividend Yield + Dividend Growth - Mean	12.58%	15.78%	-3.20%
Dividend Yield + Dividend Growth - Median	13.50%	15.57%	-2.07%
Dividend Yield + Earnings Growth - Mean	13.16%	15.93%	-2.77%
Dividend Yield + Earnings Growth - Median	13.75%	15.77%	-2.03%
Capital Asset Pricing Model - Ex post	12.30%	9.39%	2.91%
Capital Asset Pricing Model - Ex ante	9.12%	9.96%	-0.84%
State-Assessed Properties Division Recommendation:	13.00%	13.25%	-0.25%

**2010 Capitalization Rate Study**  
**Railroad Companies**  
**Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/09	Est Erns Value Line 2010	Earnings 2009	Dividends 2009	Est Div 2010	Div Yield 2010 (g/c)	ValueLine Dividend Est Gwth	Average Est Erns Gwth	E/P Ratio (d/c)	Div Yld + Dv Gwth (h+i)	Div Yld + Erns Gwth (h+j)

**Class 1 Railroads:**

A	Burlington Northern Santa Fe Corp.	98.70	5.40	4.90	1.60	1.60	1.62%	8.50%	8.87%	5.47%	10.12%	10.49%
A	Union Pacific Corp.	64.53	4.10	3.60	1.08	1.08	1.67%	4.50%	12.97%	6.35%	6.17%	14.64%
B++	CSX Corp.	48.82	3.30	2.85	0.88	0.92	1.88%	15.00%	11.73%	6.76%	16.88%	13.62%
B+	Norfolk Southern Corp.	53.00	3.30	2.80	1.36	1.40	2.64%	14.50%	11.23%	6.23%	17.14%	13.87%
Mean							1.96%	10.63%	11.20%	6.20%	12.58%	13.16%
Median							1.78%	11.50%	11.48%	6.29%	13.50%	13.75%
Weighted Average											11.56%	12.99%

Sources: Columns a, d, e, f, g and i were extracted from the Value Line Investment Survey Reports

Column c was extracted from Finance.Yahoo.com and represents December 31, 2009, closing stock prices.

Column j is an average of Value Line, Zacks.com and ThomsonReuters.com.

**2010 Capitalization Rate Study  
Railroad Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line		Value			
Rating	Company Name	Line	Zacks	Thomson	Average
<b>Class 1 Railroads:</b>					
A	Burlington Northern Santa Fe Corp.	6.00%	11.00%	9.60%	8.87%
A	Union Pacific Corp.	13.00%	12.70%	13.20%	12.97%
B++	CSX Corp.	11.50%	12.20%	11.50%	11.73%
B+	Norfolk Southern Corp.	13.00%	9.90%	10.80%	11.23%
	Mean	10.88%	11.45%	11.28%	11.20%
	Median	12.25%	11.60%	11.15%	11.48%
	Weighted Average				11.11%

**2010 Capitalization Rate Study  
Railroad Companies  
Capital Asset Pricing Model - Ex Ante**

Component	Industry Computation
Expected Future Return, S&P 500	8.47%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	4.60%
Risk Premium	3.87%
Beta	1.17
Adjusted Risk Premium	4.52%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	4.60%
Projected Return on Common Equity	<b>9.12%</b>

<sup>1</sup> WSJ.com on January 4, 2010

**2010 Capitalization Rate Study**  
**Railroad Companies**  
**Capital Asset Pricing Model - Ex Post**

Component	Industry Computation
Common Stock Return (1926 - 2009) <sup>1</sup>	11.80%
Less: Income - Long Term Government Bonds <sup>1</sup>	5.20%
Risk Premium	6.60%
Beta	1.17
Adjusted Risk Premium	7.70%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>2</sup>	4.60%
Projected Return on Common Equity	<b>12.30%</b>

<sup>1</sup> Ibbotson Associates Study

<sup>2</sup> WSJ.com on January 4, 2010

**2010 Capitalization Rate Study**  
**Railroad Companies**  
**Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zack's Beta	Thomson Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
<b>Class 1 Railroads:</b>								
A	Burlington Northern Santa Fe Corp.	1.05	1.09	1.06	1.07	0.36	0.27	0.91
A	Union Pacific Corp.	1.20	1.23	1.22	1.22	0.37	0.30	1.02
B++	CSX Corp.	1.25	1.20	1.41	1.29	0.37	0.42	1.02
B+	Norfolk Southern Corp.	1.15	1.12	1.19	1.15	0.37	0.33	0.95
	Mean	1.16	1.16	1.22	1.18		0.33	0.98
	Median	1.18	1.16	1.21	1.19		0.32	0.99
	Weighted Average				1.17		0.32	0.97
	Relevered Beta based on 25% Debt Capital Structure					1.17 <sup>3</sup>		
	Relevered Beta based on 25% Debt Capital Structure and a weighted average Beta					1.17 <sup>3</sup>		
<b>Non-Class 1 Railroads:</b>								
B+	Genesee and Wyoming, Inc.	1.35	1.33	1.33	1.34	0.28	0.29	1.11
	Mean	1.35	1.33	1.33	1.34		0.29	1.11
	Median	1.35	1.33	1.33	1.34		0.29	1.11
	Weighted Average				1.34		0.29	1.11
	Relevered Beta based on 40% Debt Capital Structure					1.55 <sup>3</sup>		
	Relevered Beta based on 40% Debt Capital Structure and a weighted average Beta					1.55 <sup>3</sup>		

<sup>1</sup> Average Debt to Equity Ratio over the last five years

<sup>2</sup> Unlevered Beta = Corrected Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's 2009 tax rate.

<sup>3</sup> Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is a prospective purchaser's tax rate (assumed to be 40%).

**2010 Capitalization Rate Study**  
**Railroad Companies**  
**Capital Structure**

a	b	c	d	e	f	g	h	i	j
Value Line Rating	Moody Bond Rating	Company Name	Common Stock Outstanding (000)	Common Stock Price 12/31/09	Market Value Equity (000)	Long Term Debt (000)	Total Capital (000)	Long Term Debt %	Common Equity %
<b>Class 1 Railroads:</b>									
A	NR	Burlington Northern Santa Fe Corp.	340,435	98.70	33,600,935	10,062,000	43,662,935	23.04%	76.96%
A	NR	Union Pacific Corp.	504,549	64.53	32,558,547	9,620,000	42,178,547	22.81%	77.19%
B++	NR	CSX Corp.	392,559	48.82	19,164,730	7,906,000	27,070,730	29.20%	70.80%
B+	NR	Norfolk Southern Corp.	367,894	53.00	19,498,382	6,685,000	26,183,382	25.53%	74.47%
		Total					<u>139,095,594</u>		
						Mean		25.15%	74.85%
						Median		24.29%	75.71%
						Weighted Average		24.64%	75.36%
<b>Non-Class 1 Railroads:</b>									
B+	NR	Genesee and Wyoming, Inc.	40,990	32.97	1,351,440	428,400	1,779,840	24.07%	75.93%
		Total					<u>1,779,840</u>		
						Mean		24.07%	75.93%
						Median		24.07%	75.93%
						Weighted Average		24.07%	75.93%

Recommended Capital Structures for lien date January 1, 2010		Equity	Debt
Class 1 Railroads:		75%	25%
Non-Class 1 Railroads:		60%	40%

Sources: . Columns a, d, and g were extracted from the Value Line Investment Survey Reports  
Column e was extracted from the Finance.Yahoo.com and represents December 31, 2009 closing stock prices.

**2010 Capitalization Rate Study  
Railroad Companies  
Interpolation of Railroad Bond Yield**

Yield Increment from Moody Average Bond Ratings			
a	b	c	d
Moody Average Rating	Moody Average Bond Yield	Number of Increments	Incremental Increase (b/c)

Aa = Aa2	5.49%		
A = A2	<u>5.84%</u>		
Difference	<u><u>0.35%</u></u>	3	0.12%
A = A2	5.84%		
Baa = Baa2	<u>6.39%</u>		
Difference	<u><u>0.55%</u></u>	3	0.18%

Interpolated Railroad Bond Yield			
a	b	c	d
Moody Average Rating	Moody Average Bond Yield	Incremental Increase	Interpolated Bond Yield
Aa2	5.490%		5.49%
Aa3		0.12%	5.61%
A1		0.12%	5.72%
A2	5.840%		5.84%
A3		0.18%	6.02%
Baa1		0.18%	6.21%
Baa2	6.390%		6.39%
Baa3		0.18%	6.57%



**2010 Capitalization Rate Study**  
**Railroad Companies**  
**Debt Yield Rates**

Bond Rating	Industrial	Public Utility	Average
Aaa	5.33%	N/A	5.33%
Aa	5.44%	5.54%	5.49%
A	5.82%	5.86%	5.84%
Baa	6.47%	6.31%	6.39%

Source: Moody's Daily Long-Term Corporate Bond Yield Averages as of December 31, 2009.